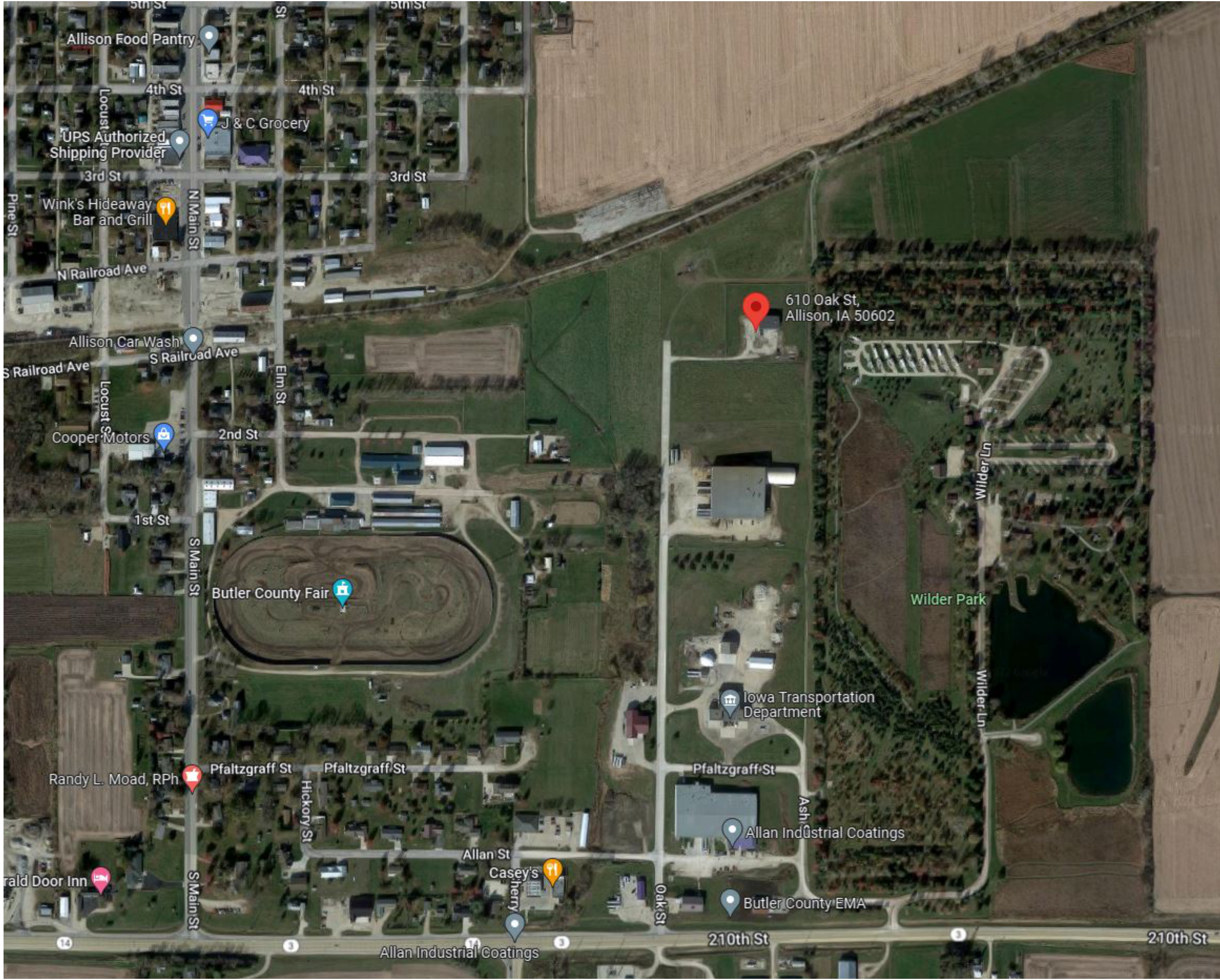


# BUTLER COUNTY PUBLIC HEALTH ADDITION

610 Oak Street, Allison, IA 50602



1 PROJECT AREA  
NOT TO SCALE

## SHEET INDEX

SHEET	NAME
G000	COVER SHEET
ARCHITECTURE & STRUCTURAL	
T1	TITLE SHEET - APEX
A1	ELEVATIONS - APEX
A2	ELEVATIONS - APEX
A3	FLOOR PLAN - APEX
A4	WALL/ROOM FINISH SCHEDULE & STANDARD DETAILS - APEX
S1	FOUNDATION PLAN & STRUCTURAL NOTES - APEX
S2	ROOF FRAMING PLAN & STRUCTURAL NOTES - APEX
S3	STRUCTURAL DETAILS - APEX
PLUMBING	
P000	PLUMBING GENERAL INFORMATION
P100	UNDER SLAB PLUMBING PLAN
P101	FIRST FLOOR PLUMBING PLAN
P500	PLUMBING DETAILS
P600	PLUMBING SCHEDULES
MECHANICAL	
M000	MECHANICAL GENERAL INFORMATION
M201	FIRST FLOOR MECHANICAL HVAC PLAN
M500	MECHANICAL DETAILS
M600	MECHANICAL SCHEDULES
MD101	FIRST FLOOR MECHANICAL PIPING DEMOLITION PLAN
MD201	FIRST FLOOR MECHANICAL HVAC DEMOLITION PLAN
ELECTRICAL	
E000	ELECTRICAL GENERAL INFORMATION
E101	FIRST FLOOR LIGHTING PLAN
E201	FIRST FLOOR POWER & SYSTEMS PLAN
E500	ELECTRICAL DETAILS & SCHEDULES

## CERTIFICATIONS

### MECHANICAL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

PRINTED OR TYPED NAME: **Jeremy L. Hulsman**

LICENSE NUMBER: **19288**

MY LICENSE RENEWAL DATE IS DECEMBER 31, **Even**

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: \_\_\_\_\_

### ELECTRICAL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

PRINTED OR TYPED NAME: **Matthew K. Gordon**

LICENSE NUMBER: **19216**

MY LICENSE RENEWAL DATE IS DECEMBER 31, **Even**

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: \_\_\_\_\_

BUTLER COUNTY PUBLIC  
HEALTH ADDITION

610 Oak Street, Allison, IA 50602

BID  
ISSUE DATE: 06/15/2022

PROJECT NUMBER: 2112202420

G000

SHIVE-HATTERY  
ARCHITECTURE+ENGINEERING

222 THIRD AVENUE SE, SUITE 300  
CEDAR RAPIDS, IA 52401  
319.364.0227 | SHIVE-HATTERY.COM



BUTLER COUNTY EMERGENCY MANAGEMENT  
SERVICE BUILDING ADDITION  
610 OAK ST, ALLISON, IA 50602

373 COLLINS ROAD NE  
CEDAR RAPIDS, IA 52402  
PH: (319) 294-2739  
WWW.APEX-SE.COM  
ENGINEERS & DESIGNERS

APEX  
STRUCTURAL

BUILDING CODE INFORMATION	
CODE:	2018 IBC
TYPE OF PROJECT:	NEW CONSTRUCTION/ADDITION
OCCUPANCY OF EXISTING BUILDING:	B
OCCUPANCY OF NEW ADDITION:	B
CONSTRUCTION TYPE OF EXIST. BLDG:	TYPE IIIB
CONSTRUCTION TYPE OF NEW ADDITION:	TYPE VB
BUILDING STORIES:	1
SPRINKLER SYSTEM:	NO SPRINKLER
EXISTING BUILDING AREA MAIN FLOOR:	4,000 SF
NEW ADDITION AREA MAIN FLOOR:	4,256 SF
NEW GARAGE AREA:	1,280 SF
TOTAL PROJECT AREA:	9,536 SF

NEW ADDITION OCCUPANT LOAD (GROSS)  
Main Floor = 4,256/150 gross = 28  
Garage = 1,280/200 gross = 6

TOTAL = 34

THE COMMON EGRESS TRAVEL IN A GROUP B OCCUPANCY  
SHALL NOT BE MORE THAN 75 FEET, PROVIDED THAT THE  
BUILDING ISN'T PROTECTED WITH AN APPROVED  
AUTOMATIC SPRINKLER SYSTEM.

THE EXIT ACCESS TRAVEL DISTANCE SHALL NOT BE  
MORE THAN 200' PER IBC 1017 WITHOUT SPRINKLER  
SYSTEM FOR B OCCUPANCY

PER IBC 504 THE MAXIMUM BUILDING HEIGHT = 40 FEET  
AND THE ALLOWABLE STORIES = 2

ALLOWABLE BUILDING AREA = 9,000 SF

GENERAL STRUCTURAL NOTES

- Design Basic: International Residential Code, 2018 Edition (IRC-2018)  
Allowable stress design (ASD) Methodology
- Design Live Loads  
-Importance Factors based on Occupancy Category III  
Roof:  
Ground Snow..... 30 PSF  
(Plus drift loading in accordance with ASCE 7-16)  
Live Load..... 20 PSF or 300 LBS. Concentrated Load  
Dead Load..... 20 PSF  
Laterals:  
Wind..... Per IRC 2018 Requirements (115 MPH 3-second gust, Exposure C)
- Special inspection is recommended for the following types of work:  
-Cast-in-place concrete  
-Bolts indicated to be fully tightened  
-Field welded structural steel framing connections
- Refer to Architectural Floor Plans for dimensional location of non-bearing partition walls, door and window locations, and dimensions not shown on the structural plans.
- Unless otherwise noted, elevations are to the TOP of beams, footings, slabs, etc.
- Building drainage, insulation, flashing's, vapor / moisture protection, and fireproofing are not shown on the structural plans. Refer to the Architectural / Mechanical drawings and specifications for requirements.
- All sections, details and notes shown on the structural drawings are intended to be typical and shall apply to similar situations unless otherwise shown.
- The structural integrity of the building shown on these plans is dependent upon completion according to the Contract Documents. It is the Contractor's responsibility to furnish all temporary bracing and / or support that may be required as a result of construction methods and sequences.

GENERAL FOUNDATION NOTES

- Foundation design was based on an assumed net allowable bearing capacity of 2000 psf. Apex Structural engineering recommends that a Geotechnical consultant be present to determine if the soil is suitable for bearing and an appropriate bearing capacity has been met.
- Foundations shall bear on suitable native soils or compacted structural fill extending to suitable native soils as determined by the Geotechnical Engineer.
- Existing unsuitable fill material encountered below floor slabs and foundations, as determined by the Geotechnical Engineer, shall be removed and replaced with properly placed and compacted structural fill material.
- Excavations shall be free of water and loose soil prior to concrete placement. Any unsuitable material is to be removed and replaced with compacted granular material.
- Any fill material that may be required to bring the subgrade to bearing elevation is to be tested and approved by the Geotechnical Engineer prior to placement. Fill material shall be placed in lifts not to exceed 9 inches in thickness when heavy, self-propelled compaction equipment is utilized, 6" inches in thickness if hand held compaction equipment is required.  
Fill material shall be compacted as determined by the geotechnical engineer and soils report, or:  
Under Slabs: Material should be compacted to at least 95% of it's maximum Standard Proctor Dry Density (ASTM D-698).  
Under Footings: Material should be compacted to at least 98% of it's maximum Standard Proctor Dry Density (ASTM D-698).  
The higher degree of fill compaction below footings shall extend laterally beyond the exterior edges of the element at least 8 inches per foot of thickness below the element's base elevation.
- Locate, verify and mark the location of underground utilities prior to excavation for foundations.

CONCRETE NOTES

- Except where modified by these Plans and Specifications, all concrete work shall conform to the requirements of ACI 301-Tested, "Specifications for Structural Concrete Buildings" and ACI 318-Tested, "Building Code Requirements for Reinforced Concrete".
- Reinforcing is to be detailed in accordance with ACI 318-Tested, "Manual of Standard Practice for Detailing Reinforced Concrete Structures".
- Minimum Concrete 28 Day Compressive Strength:  
Footings..... 3000 PSI  
Foundation Walls, Piers..... 4000 PSI  
Slabs-on-grade..... 4000 PSI
- Concrete reinforcing steel shall be in accordance with the following standards:  
Reinforcing Bars..... ASTM A615, Grade 60  
Welded wire fabric..... ASTM A185
- The following lap-splices shall be maintained including development and embedment, unless noted otherwise:  
Reinforcing Bars:  
#6 and Smaller:  
Horizontal Bars..... 48 bar diameters  
Vertical Bars..... 40 bar diameters  
Welded wire fabric: 8 inches
- Maintain the minimum concrete coverage for reinforcing as indicated, unless noted otherwise on the drawings.  
Concrete deposited directly against earth..... 3 inches  
Concrete exposed to earth or weather:  
#6 and larger..... 2 inches  
#5 and smaller..... 1-1/2 inches  
Concrete not exposed to earth or weather:  
Slabs and walls..... 1 inch  
Columns / pier ties..... 1-1/2 inches  
Place the reinforcing bars as near to the surface as these minimums permit, unless specifically noted otherwise.
- Unless noted otherwise, provide #5 x 4'-0" bar, at 45 degrees to main reinforcing at corners of wall and slab openings.
- Reinforcing shall run continuous through construction joints unless shown otherwise.
- Hot weather concrete operations shall be in accordance with ACI 305. Cold weather concrete operations shall be in accordance with ACI 306.
- 4% air entrainment shall be added to concrete used for exterior construction.

PRE-ENGINEERED ROOF TRUSSES

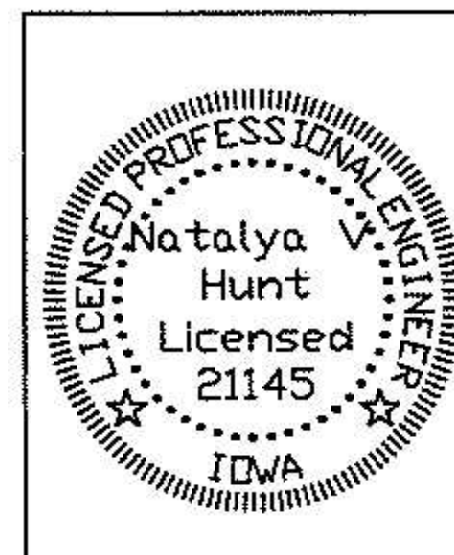
- See Design loads in general structural notes on Sheets S1 for pre-engineered roof truss design loads. Refer to Sheet S2 for Snow Drift Loads.  
Uplift at Sloped Roof:  
Edge Zone..... 38 PSF  
Interior Zone..... 18 PSF
- Maximum snow load deflection shall not exceed L/360. Maximum total load deflection shall not exceed L/240. Maximum total load deflection shall not exceed 3/4" for roof trusses.
- Truss manufacturer shall arrange truss web members as required by design and duct locations.
- Framing plans indicate the required basic truss layout.
- Proper erection bracing shall be installed to hold the trusses true and plumb and in safe condition until permanent truss bracing and bridging can be safely secured in place to form a structurally sound framing system. All erection and permanent bracing shall be installed and all components permanently fastened before the application of any loads to the trusses. All bracing shall be designed by manufacturer.
- Truss manufacturer shall design permanent chord bridging.
- The truss manufacturer shall provide shop drawings stamped and signed by a professional engineer in the state of Iowa. The deferred submittal item shall be reviewed by the engineer of record for general conformance with the contract documents and the design concept of the project.

STRUCTURAL WOOD FRAMING NOTES

- All structural framing lumber shall be clearly marked and of a quality to meet the following minimum grade requirements.  
Studs, plates: Spruce Pine Fir (SPF) No. 1/No. 2 grade under NLGA grading requirements, U.S.D.  
Headers: (Refer to Header Schedule)
- All wood in contact with concrete or masonry shall be pressure treated preservative lumber. All steel nails, bolts and connectors in contact with pressure treated lumber shall be galvanized to G185 thickness specifications or stainless steel.
- All nailing of lumber shall conform to IBC table 2304.9.1 Fastening Schedule, except as otherwise noted.
- Attach multiple studs together w/ (2) rows of 16d nails at 12" o.c. (staggered, unless noted otherwise).
- Exterior Wall sheathing shall be 7/16 inch thick APA rated 32/16 sheathing fastened with 8d common nails at 6 inches on-center at all supported panel (individual sheet) edges and at 12 inches on-center at all intermediate supports, except as indicated otherwise. Refer to Shear Wall Schedule for shear wall requirements.
- Roof sheathing shall be 15/32 inch thick APA rated 40/20 sheathing fastened with 8d common nails at 6 inches on-center at all supported panel (individual sheet) edges and at 12 inches on-center at all intermediate supporting members, except as indicated otherwise. Stagger joints parallel with the roof trusses. Use galvanized metal plywood sheathing clips between trusses.
- Laminated veneer lumber (LVL) beams and headers shall be "1.9E Microlam LVL" as manufactured by TRUS JOIST or approved equivalent.

INDEX OF SHEETS

T1 - Title Sheet  
A1 - Elevations  
A2 - Elevations  
A3 - Floor Plan  
A4 - Wall/Room Finish Schedule & Standard Details  
S1 - Foundation Plan & Structural Notes  
S2 - Roof Framing Plan & Structural Notes  
S3 - Structural Details



I hereby certify that this engineering document was prepared and the related engineering work was performed by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.  
Natalya V. Hunt  
License number 21145  
My license renewal date is December 31, 2023  
Pages or sheets covered by this seal: T1, A1, A2, A3, A4, S1, S2, & S3  
12/17/21  
DATE

Date				
Revision				

Key Plan

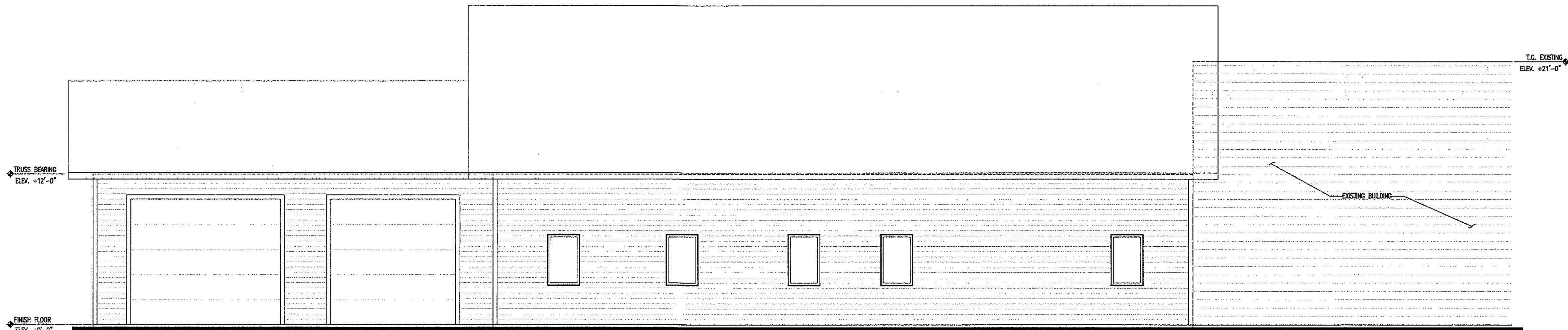
BUTLER COUNTY EMS ADDITION  
76'x56'x14' BUILDING W/ 40'x32'x14' GARAGE  
610 OAK ST  
ALLISON, IA 50602

TITLE SHEETS

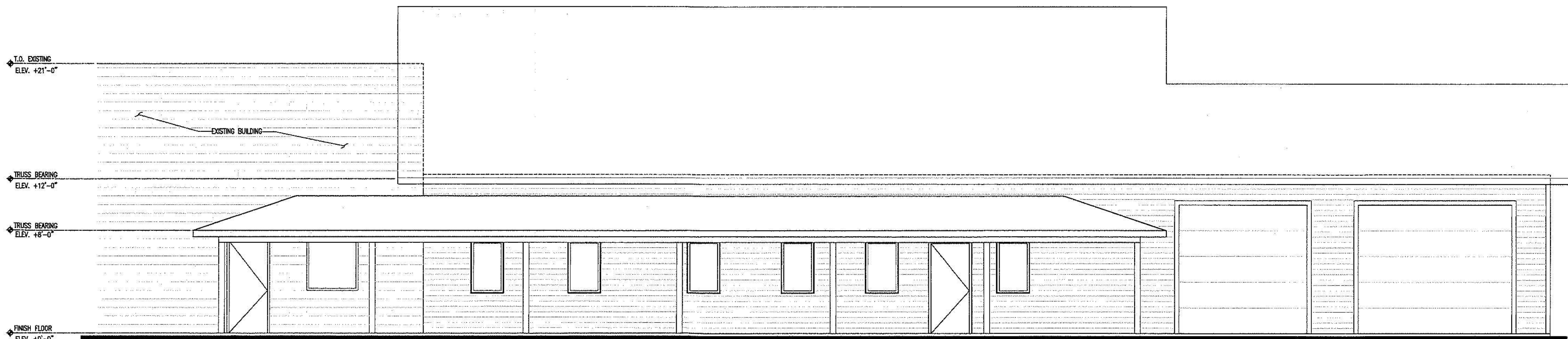
Drawn By:	NHN
Checked By:	NVH
Project No.:	21-290
Date:	12/17/21

Sheet No.  
T1





NORTH ELEVATION  
SCALE: 1/4"=1'-0"



SOUTH ELEVATION  
SCALE: 1/4"=1'-0"

373 COLLINS ROAD NE  
CEDAR RAPIDS, IA 52402  
PH: (319) 294-2739  
WWW.APEX-SE.COM

**APEX**  
**STRUCTURAL**

ENGINEERS & DESIGNERS

Revision	Date

Key Plan

BUTLER COUNTY EMS ADDITION

76'x56'x14' BUILDING W/ 40'x32'x14' GARAGE

610 OAK ST

ALLISON, IA 50602

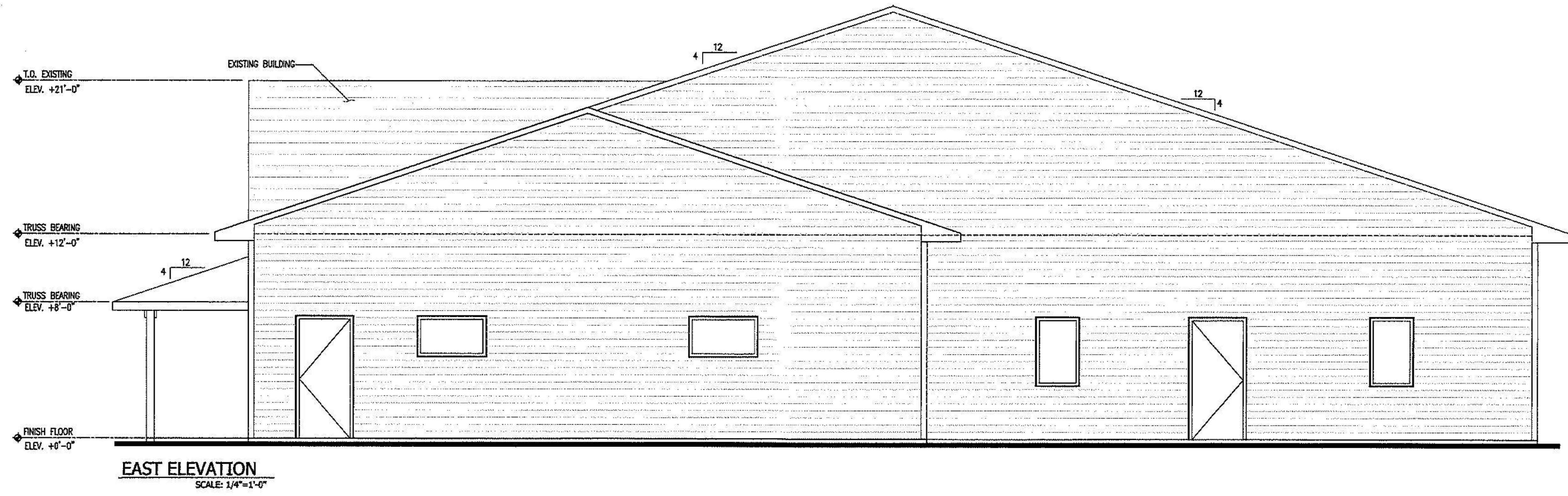
BUILDING ELEVATIONS

Drawn By:	NHN
Checked By:	NVH
Project No.:	21-290
Date:	12/17/21

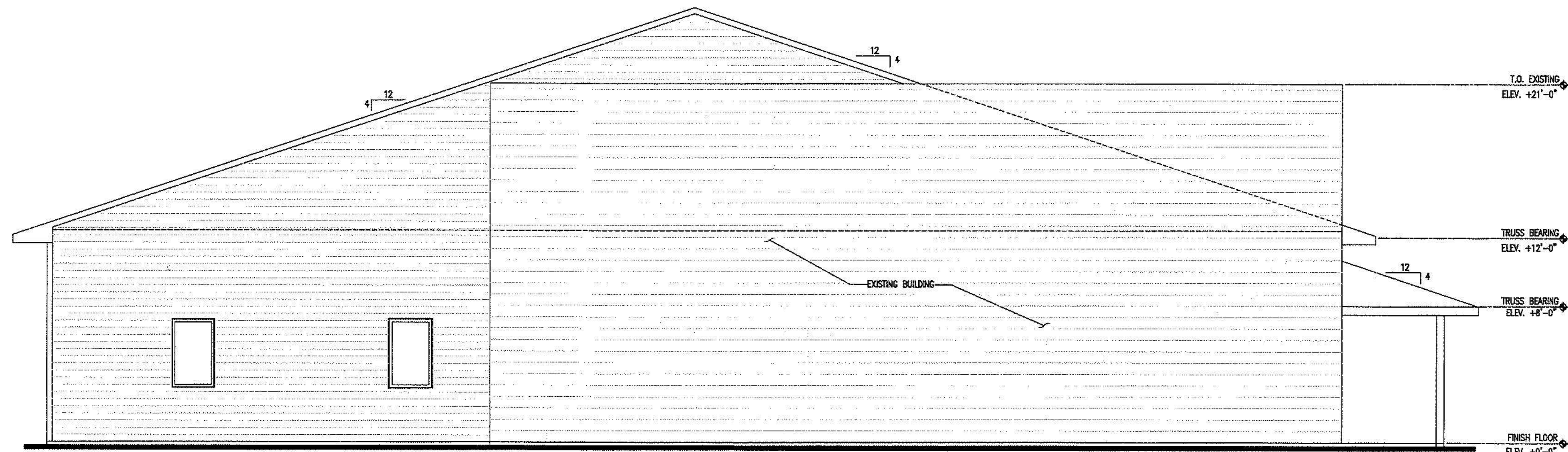
Sheet No.

A1





EAST ELEVATION  
SCALE: 1/4"=1'-0"



WEST ELEVATION  
SCALE: 1/4"=1'-0"

373 COLLINS ROAD NE  
CEDAR RAPIDS, IA 52402  
PH: (319) 294-2739  
WWW.APEX-SE.COM

**APEX**  
STRUCTURAL  
ENGINEERS & DESIGNERS

Revision	Date

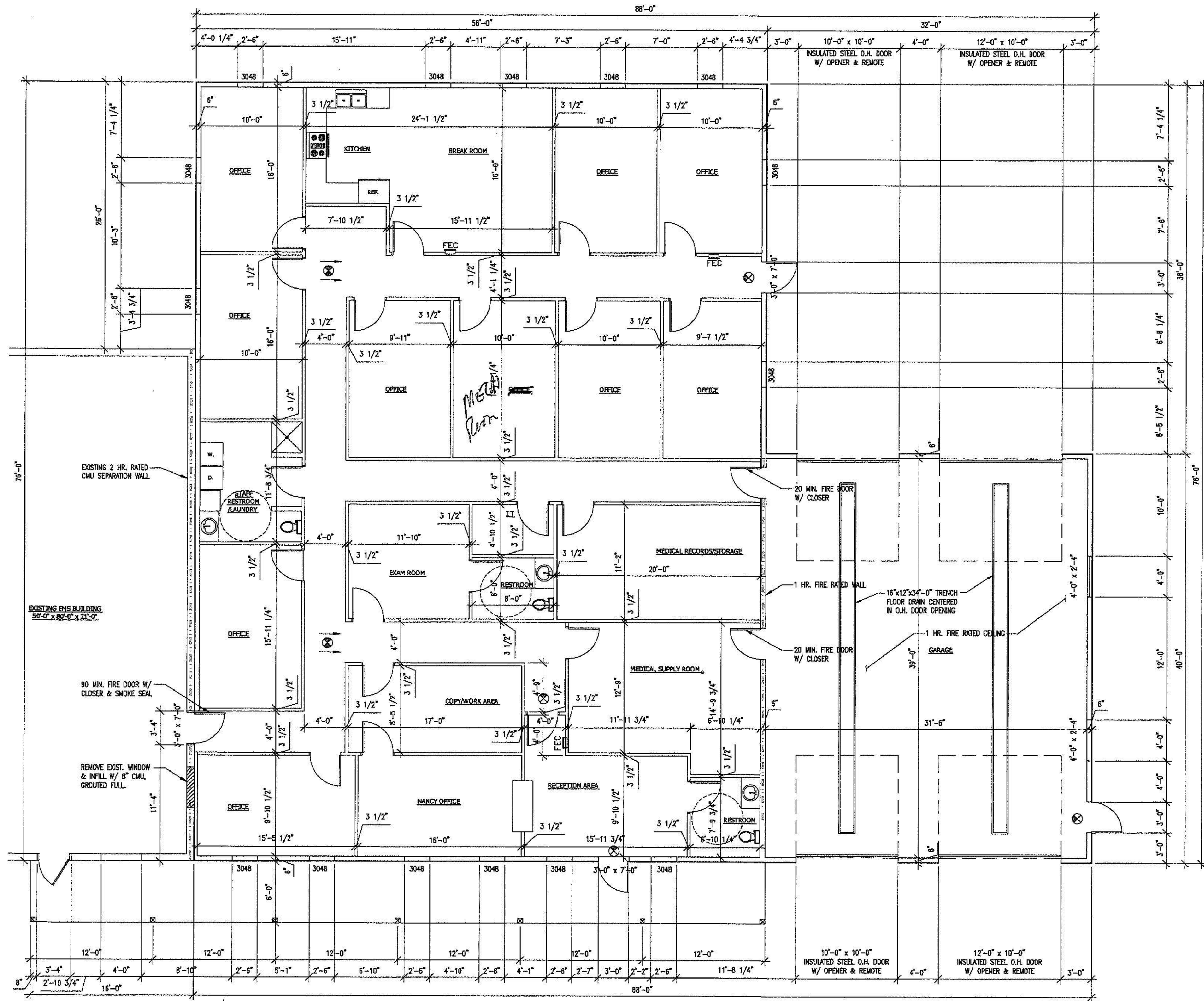
Key Plan

BUTLER COUNTY EMS ADDITION  
76'x56'x14' BUILDING W/ 40'x32'x14' GARAGE  
610 OAK ST  
ALLISON, IA 50602  
BUILDING ELEVATIONS

Drawn By:	NHN
Checked By:	NVH
Project No.:	21-290
Date:	12/17/21

Sheet No.  
**A2**





MAIN FLOOR PLAN  
4125 FINISHED SQ. FT. SCALE: 3/16"=1'-0"  
1229 GARAGE SQ. FT.

Date	
Revision	

Key Plan

BUTLER COUNTY EMS ADDITION

76'x56'x14' BUILDING W/ 40'x32'x14' GARAGE  
610 OAK ST  
ALLISON, IA 50602

MAIN FLOOR PLAN

Drawn By:	NHN
Checked By:	NVH
Project No.:	21-290
Date:	12/17/21

Sheet No.  
**A3**



WALL TYPES LEGEND

1. SEE DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION DETAILS.  
2. SEE SCHEDULES FOR BASE, FINISH, & OTHER REQUIREMENTS.  
3. EXTEND PARTITION WALLS 8" MIN. ABOVE CEILING AND PROVIDE DIAGONAL BRACING TO HEAD OF ADJACENT WALLS.  
4. EXTEND RESTROOM PARTITION WALLS TO ROOF STRUCTURE.  
5. PROVIDE SOLID BLOCKING FOR FIXTURES & ACCESSORIES.  
6. MOISTURE RESISTANT GYPSUM WALL BOARD TYPE X TO BE USED IN BATHROOMS.

ROOM NAME	FLOOR	BASE	WALLS	CEILING	FINISH NOTES
RESTROOMS	CT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
KITCHEN	VCT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
STAFF RESTROOM	VCT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
EXAM ROOM	VCT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
MEDICAL RECORDS/STORAGE	VCT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
MEDICAL SUPPLIES	VCT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
RECEPTION	CPT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
OFFICE	CPT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
COPY/WORK	CPT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
IT ROOM	CPT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER
HALLWAY	CPT	4" VB	GVB	GVB	COLOR SELECTION BY OWNER

1HR CEILING/ROOF ASSEMBLY @ GARAGE

2HR SEPARATION WALL ASSEMBLY

373 COLLINS ROAD NE  
CEDAR RAPIDS, IA 52402  
PH: (319) 2942739  
WWW.APEX-SE.COM

**APEX**  
STRUCTURAL

ENGINEERS & DESIGNERS

Date	
Revision	
Key Plan	

**BUTLER COUNTY EMS ADDITION**  
76'x56'x14' BUILDING W/ 40'x32'x14' GARAGE  
610 OAK ST  
ALLISON, IA 50802

WALL/ROOM FINISH SCHEDULE & STANDARD DETAILS

Drawn By:	NHN
Checked By:	NVH
Project No.:	21-290
Date:	12/17/21

Sheet No.  
**A4**

1 STANDARD STALL PLAN AND ELEVATIONS  
2 FORWARD REACH  
3 ALCOVE CLEARANCES

4 SURFACE MOUNTED ACCESSORIES  
5 STORAGE  
6 SIDE REACH  
7 SIDE REACH

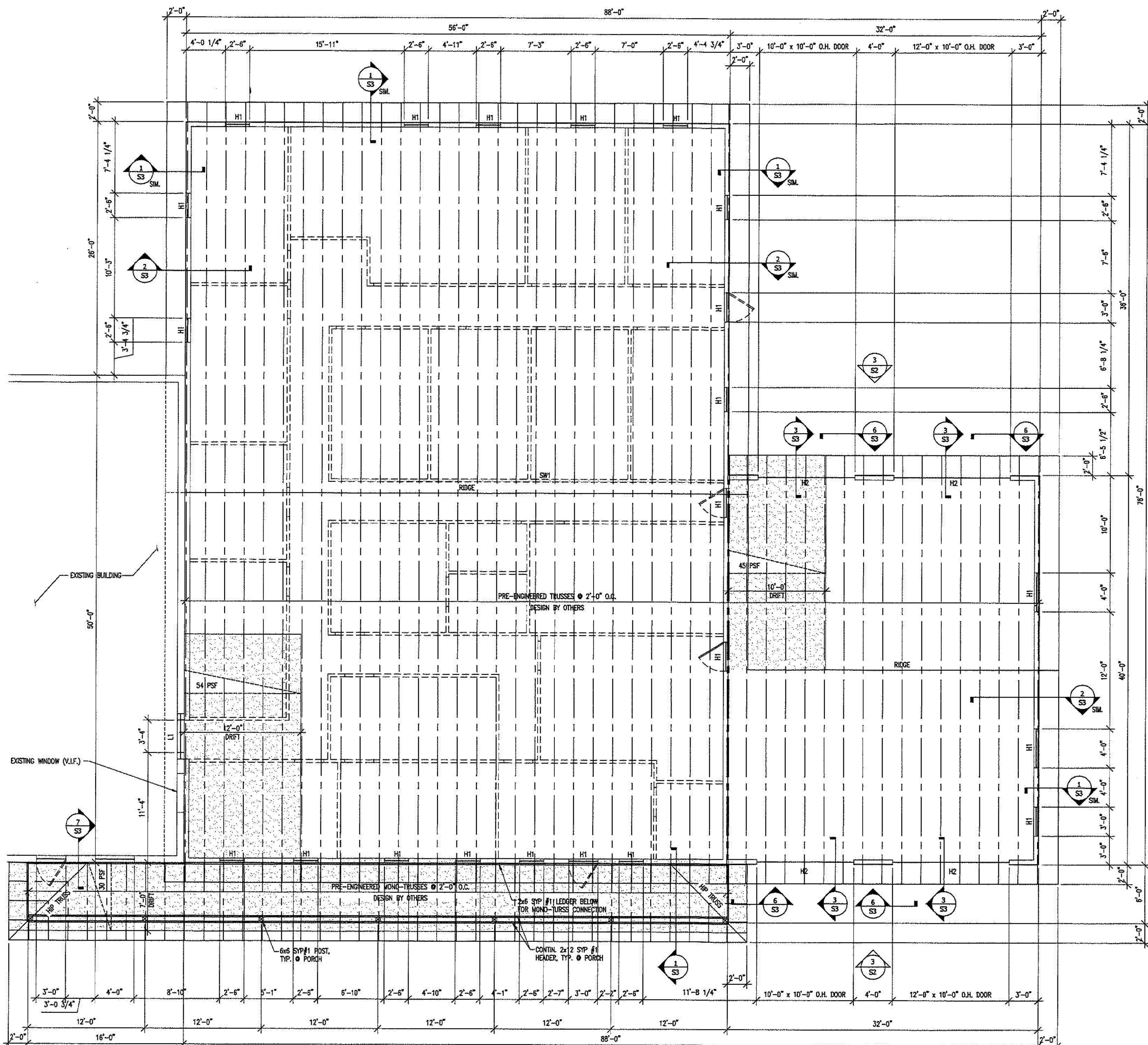
8 FIRE EQUIP. & WALL CONST.  
9 WATER CLOSET CLR FLR. SPACE  
10 ACCESSIBILITY LAV  
11 DOOR CLEARANCES

TYPICAL ACCESSIBLE PARKING STALLS  
RESTROOM SIGNAGE DETAIL  
BATHROOM LAYOUT  
ADA SHOWER DETAIL



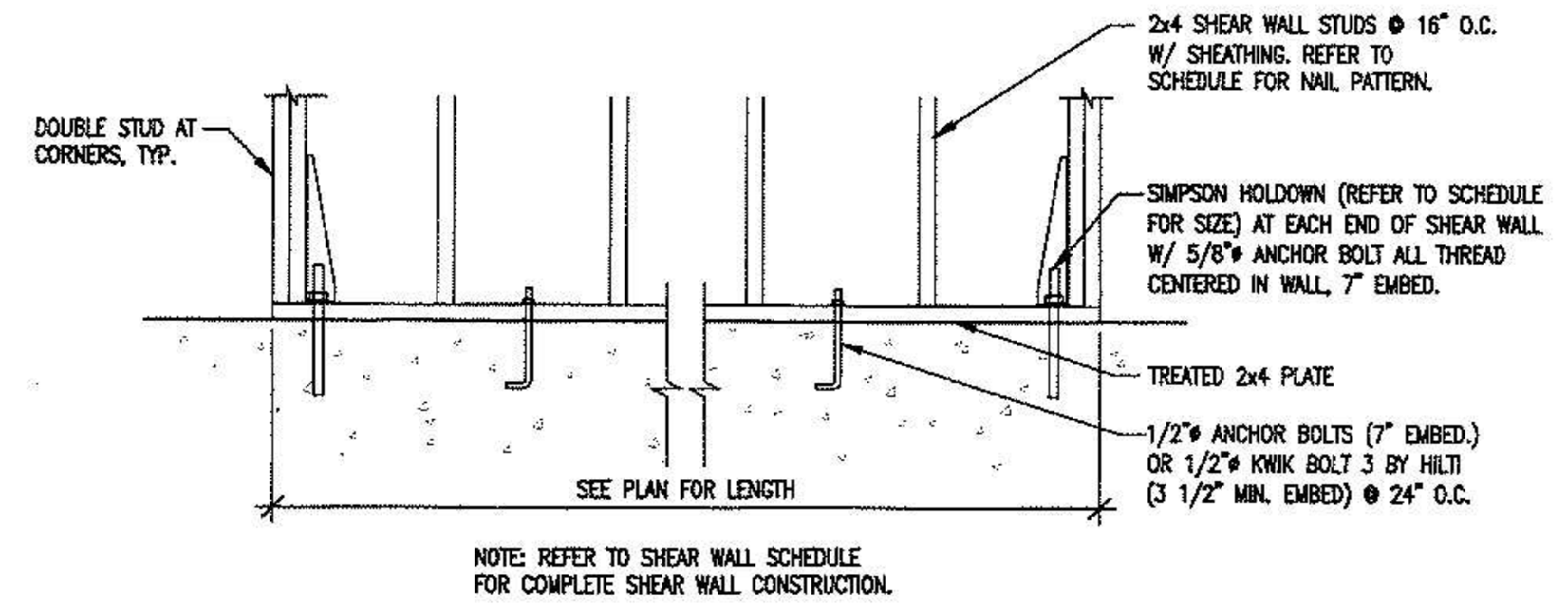




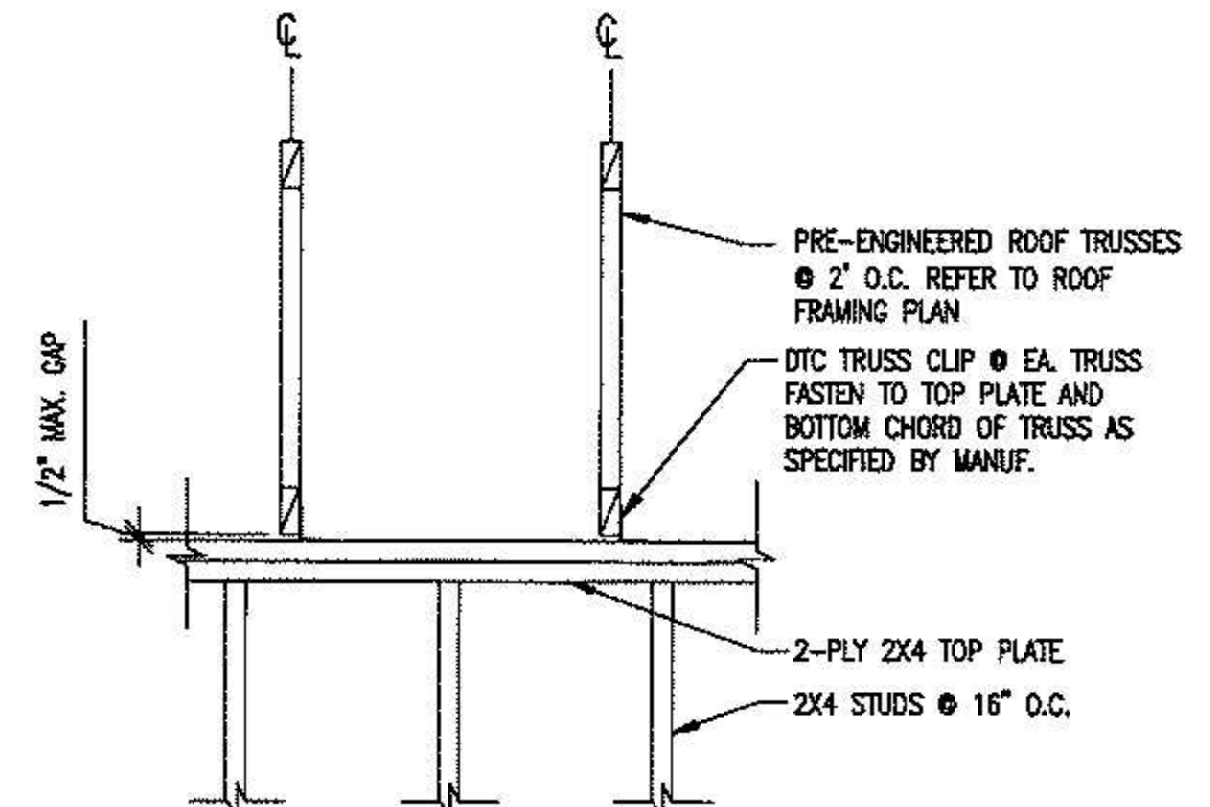


**ROOF FRAMING PLAN**  
SCALE: 3/16"=1'-0"

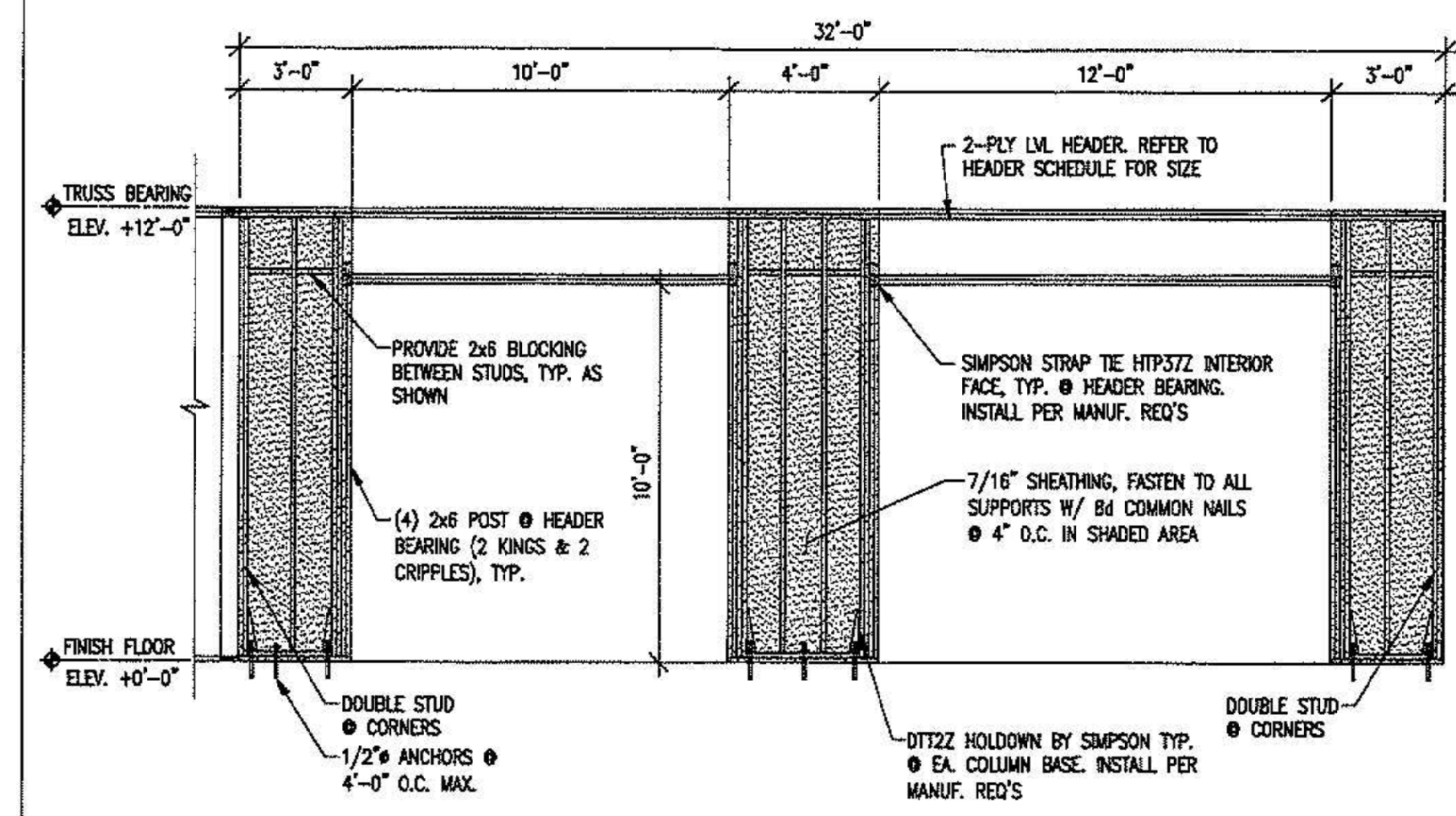
SHEAR WALL SCHEDULE							
WALL NO.	WALL TYPE	COLUMN SIZE	SIMPSON CLIP AT WALL TOP	SIMPSON HOLDOWN OR STRAP AT COLUMN BASE	MINIMUM SHEATHING THICKNESS	SHEATHING FASTENER REQUIREMENTS	REFERENCE
SW1	2x4 SPF #1/#2	(2) 2x4 SPF #1/#2	HG10 @ EA. TRUSS	HOU2-SDS2.5	1/2" GYPBOARD - EACH SIDE	6d COOLER NAILS @ 4" O.C. AT PANEL EDGES 6d COOLER NAILS @ 12" O.C. INTERM. SUPPORTS	SEE DET. 1/S2 & 2/S2



**1 TYP. CONNECTION @ SHEAR WALL BASE**  
Scale: 3/4" = 1'-0"



**2 TYP. CONNECTION @ SHEAR WALL TOP**  
Scale: 3/4" = 1'-0"



**3 GARAGE BRACED WALL ELEVATION**  
SCALE: 1/4"=1'-0"

HEADER SCHEDULE			
MARK	SIZE	COLUMN SIZE EACH END	REMARKS
H1	2-PLY 2x12 SPF #1/#2 W/ 2" FOAM & 1/2" PLYWOOD BLOCKING	(1) 2x6 CRIPPLE & (2) 2x6 KING	#1H
H2	2-PLY 18" LVL W/ 2" FOAM	(2) 2x6 CRIPPLE & (2) 2x6 KINGS	#1H

**REMARKS:**  
1H. VERIFY ROUGH OPENING WITH ARCHITECT'S FLOOR PLAN.  
2H. ALL INTERIOR HEADERS ARE 2-PLY 2x6 SPF #1/#2.

LINTEL SCHEDULE			
MARK	BEARING	SECTION	REMARKS
L1	8"	WB10 W/ BOTTOM F 3/8" x 7 1/2"	

379 COLLINS ROAD NE  
CEDAR RAPIDS, IA 52402  
PH: (319) 294-2739  
WWW.APEX-SE.COM

APEX

STRUCTURAL  
ENGINEERS & DESIGNERS

Date: \_\_\_\_\_

Revision: \_\_\_\_\_

Key Plan

BUTLER COUNTY EMS ADDITION  
76'x56'x14' BUILDING W/ 40'x32'x14' GARAGE  
610 OAK ST  
ALLISON, IA 50602

ROOF FRAMING PLAN

Drawn By: NHN

Checked By: NVH

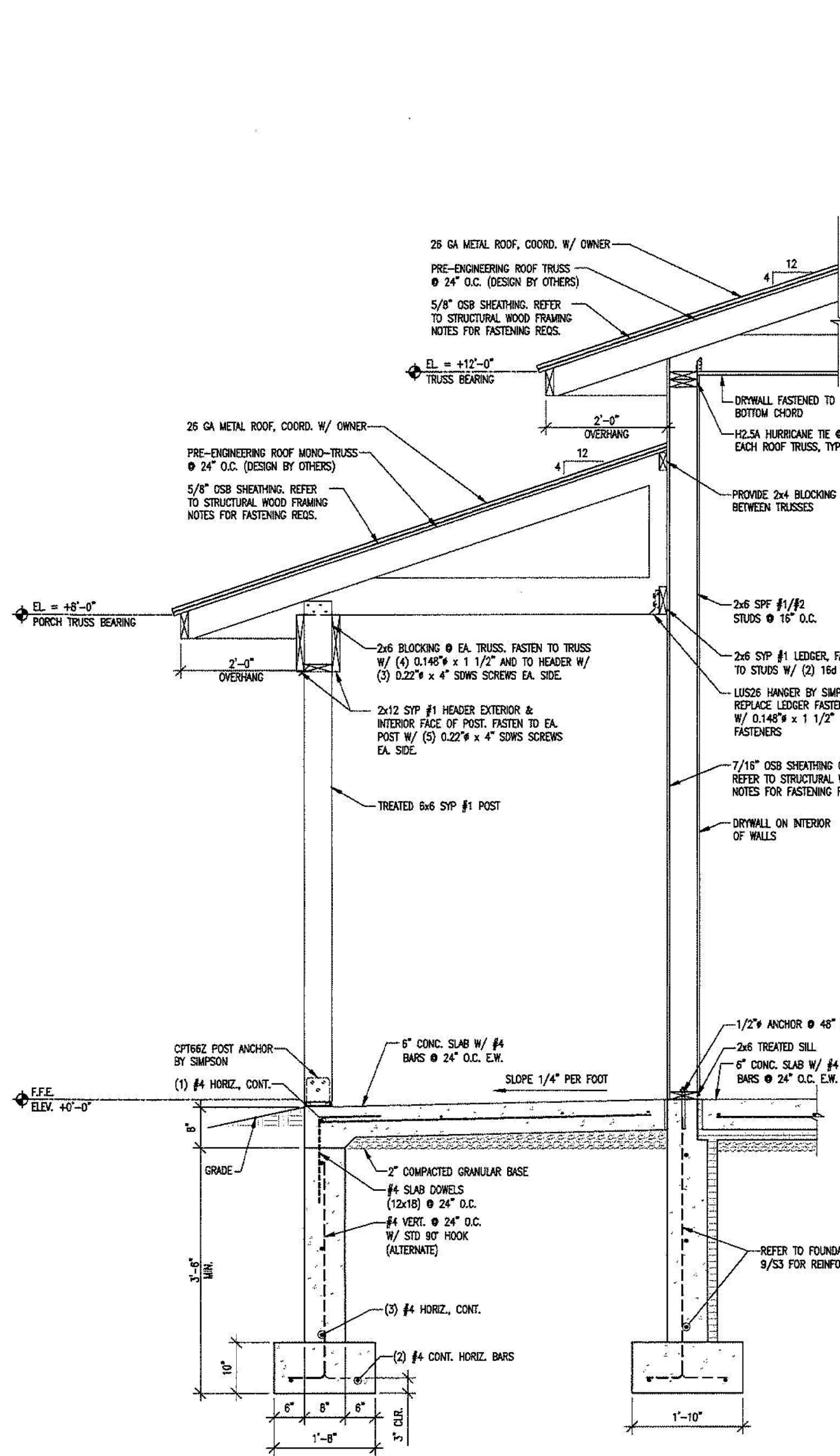
Project No.: 21-290

Date: 12/17/21

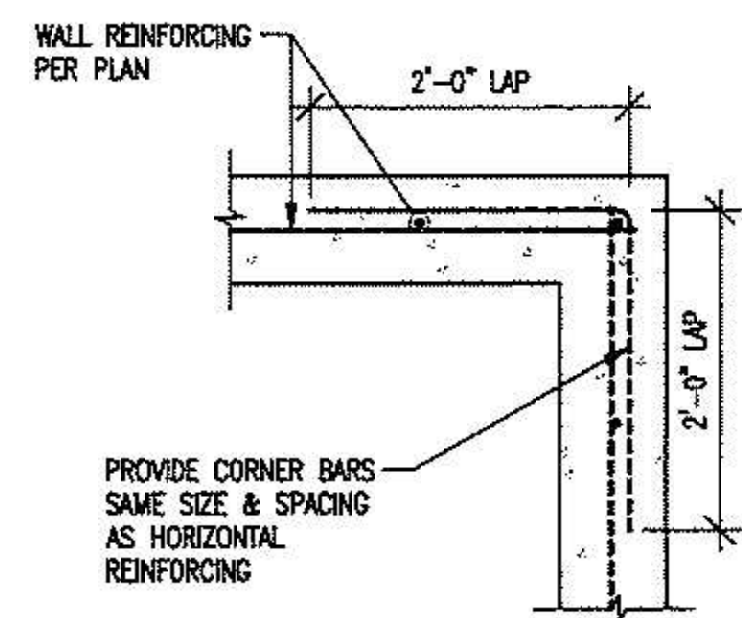
Sheet No.

S2

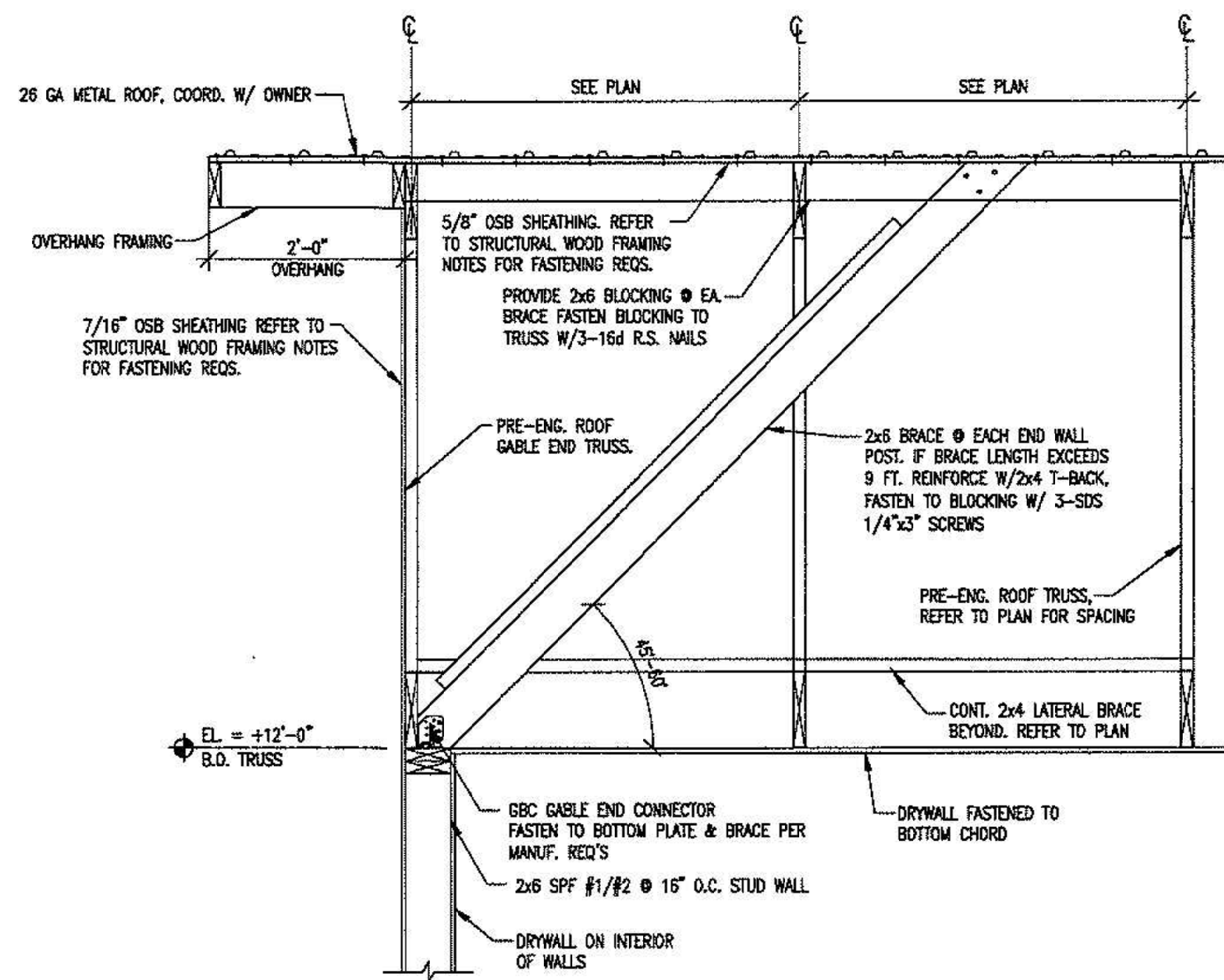




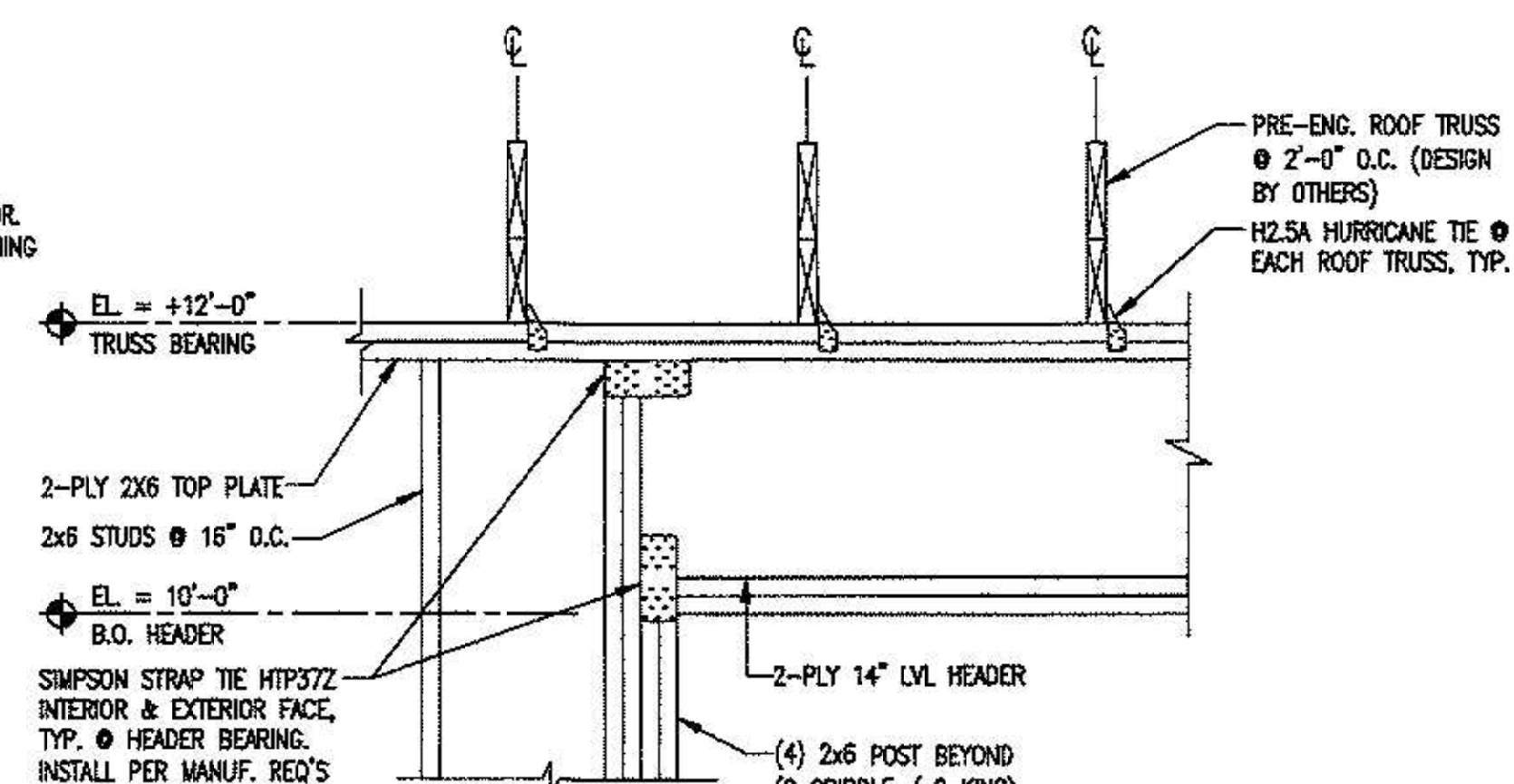
1 EXTERIOR WALL WITH PORCH SECTION  
Scale: 3/4" = 1'-0"



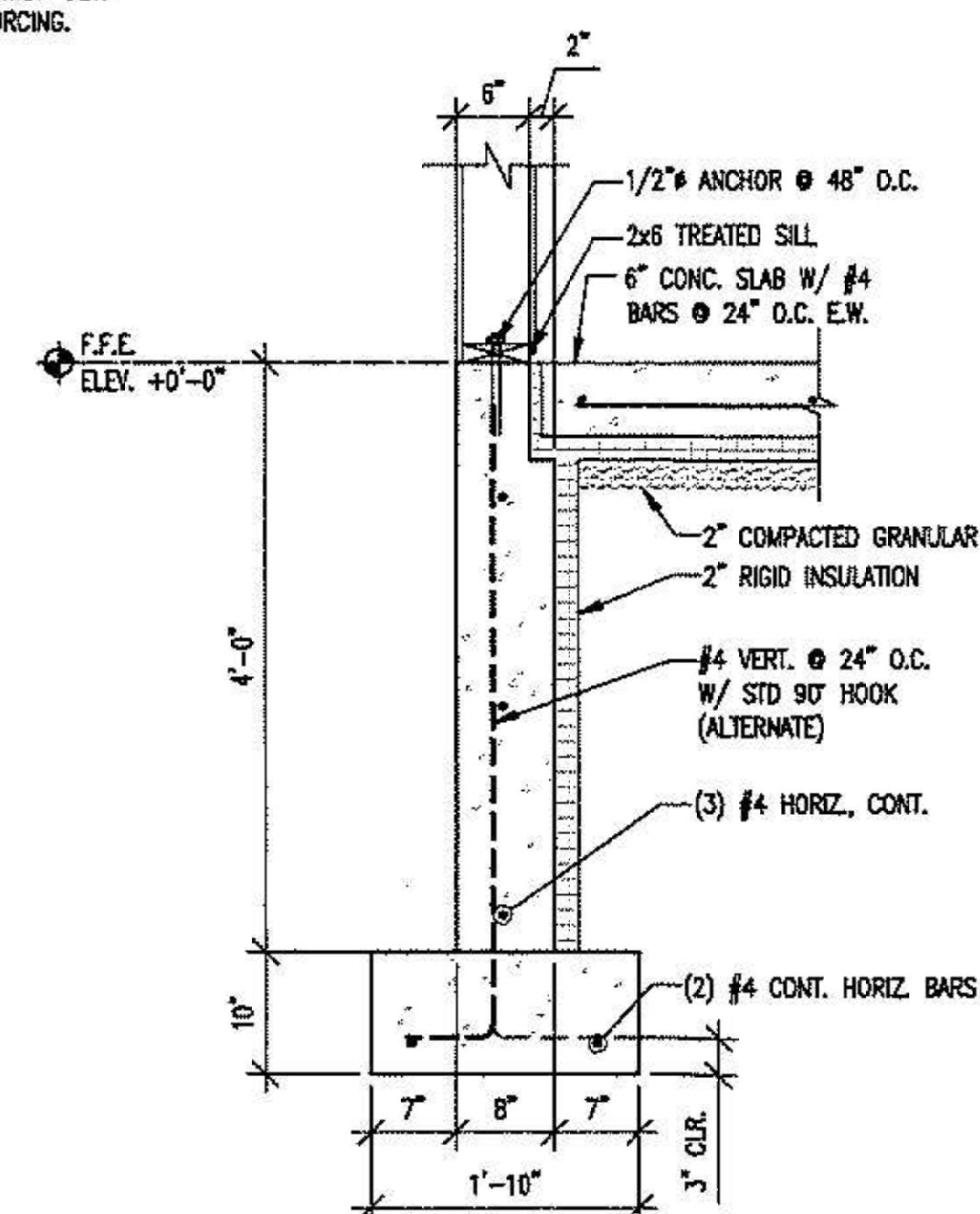
9 TYPICAL CONCRETE WALL CORNER PLAN  
Scale: 3/4" = 1'-0"



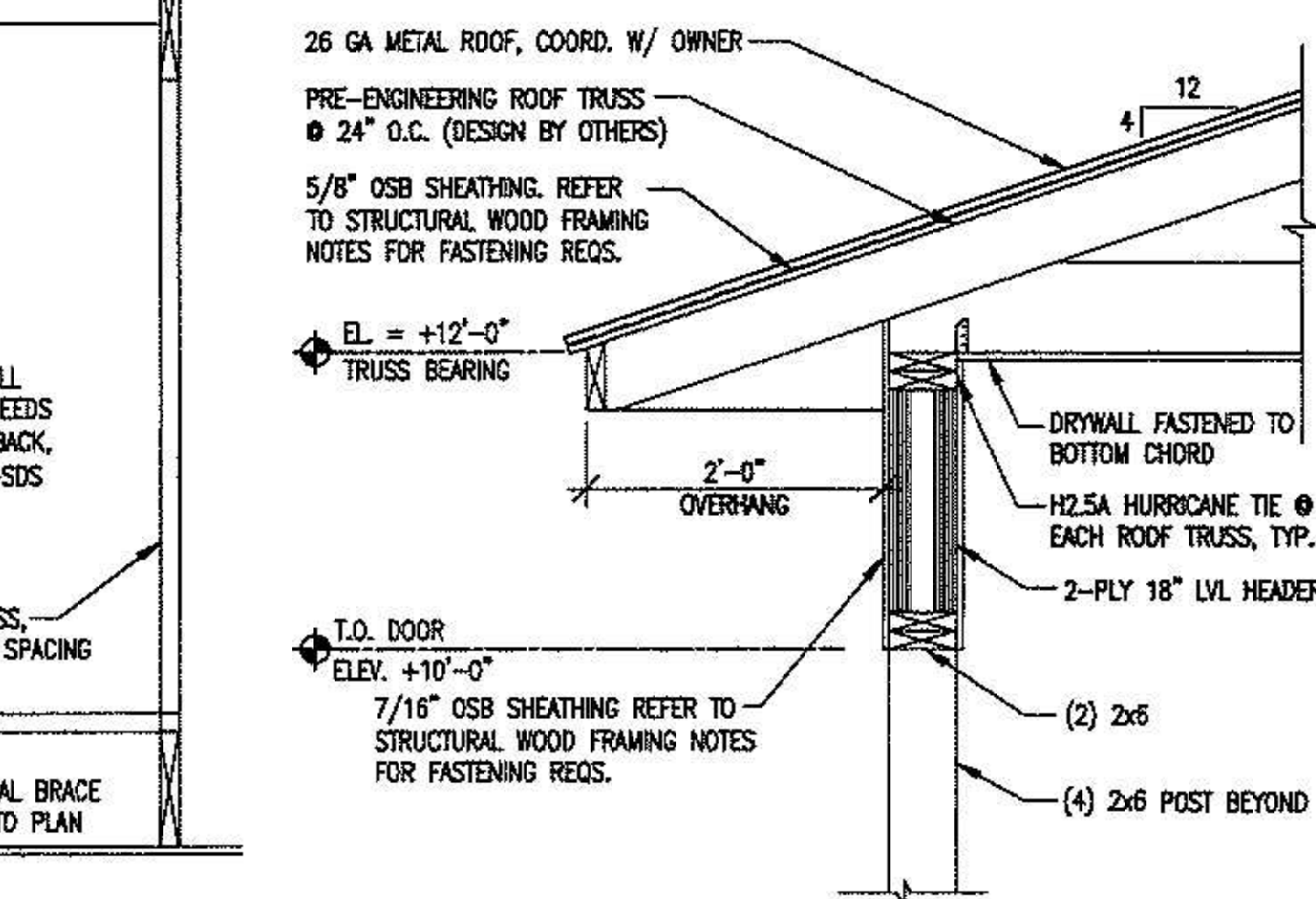
2 GABLE END WALL SECTION  
Scale: 3/4" = 1'-0"



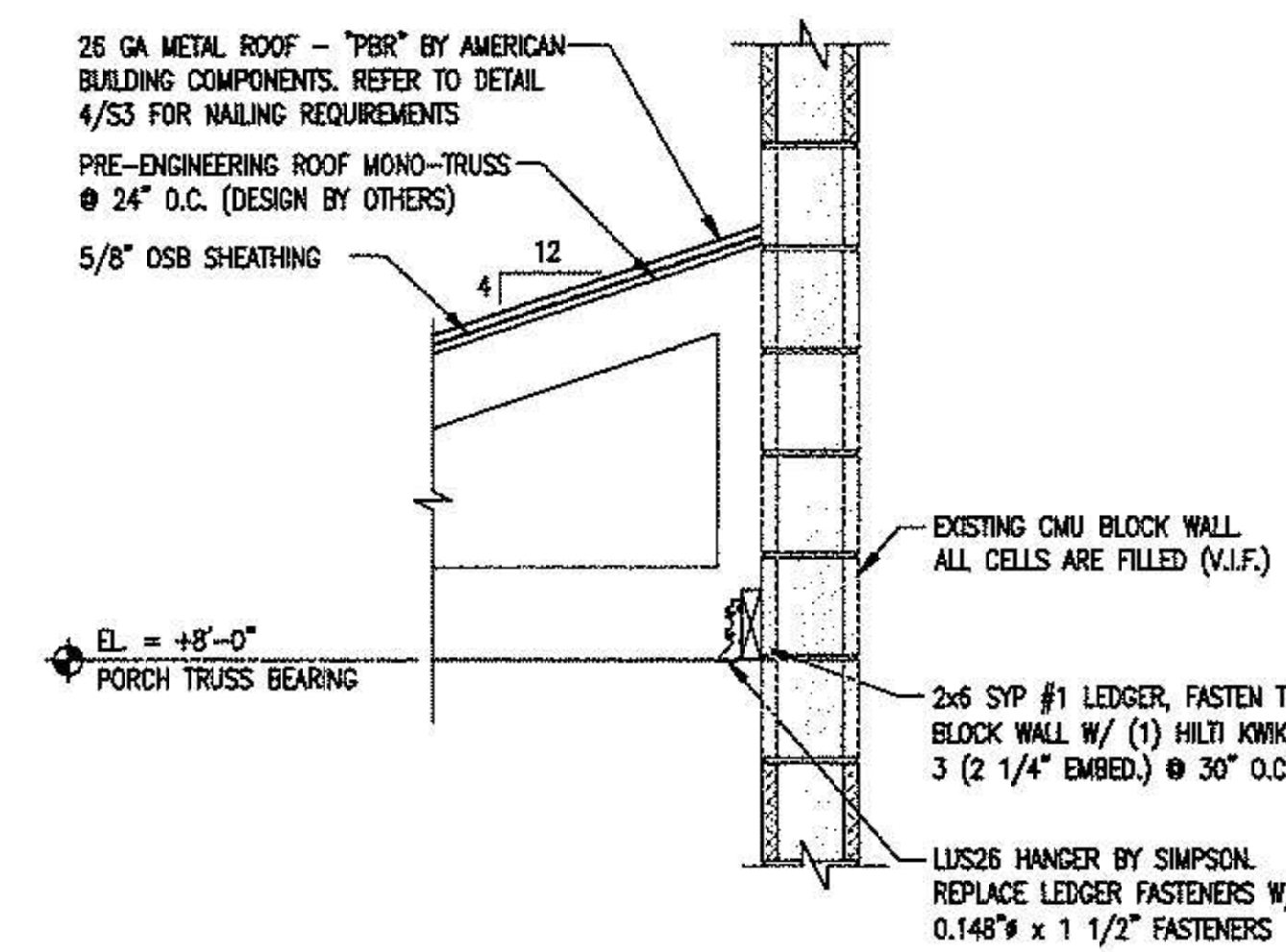
6 O.H. DOOR HEADER AT BEARING WALL  
Scale: 3/4" = 1'-0"



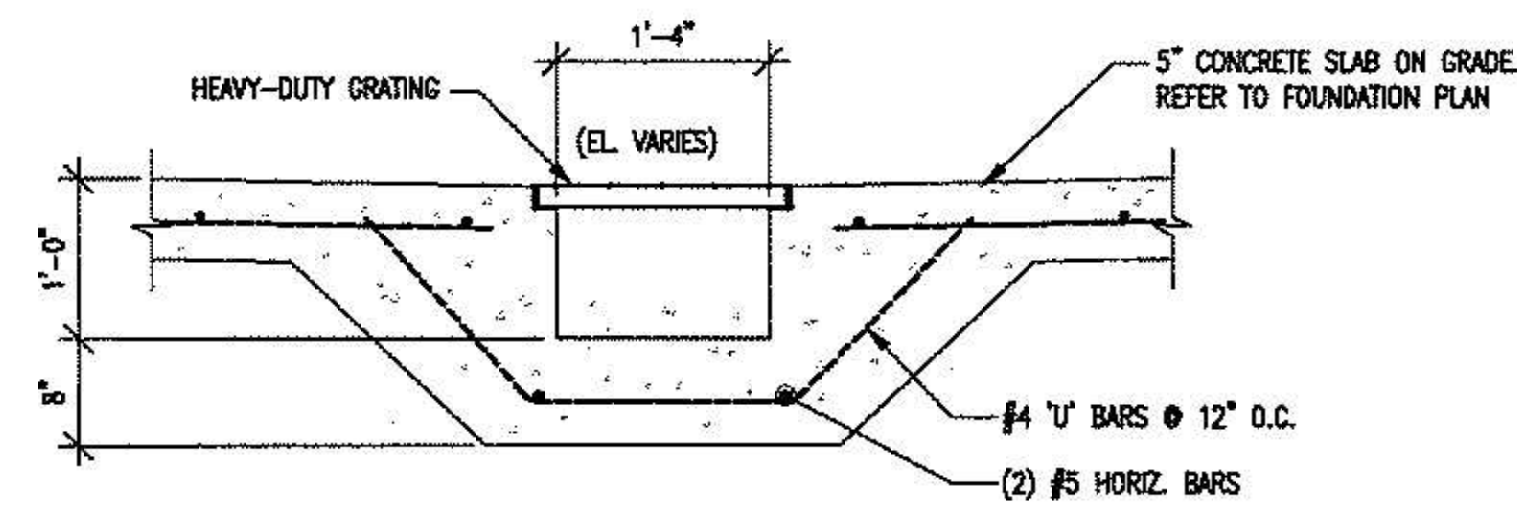
10 TYPICAL SIDE WALL SECTION  
Scale: 3/4" = 1'-0"



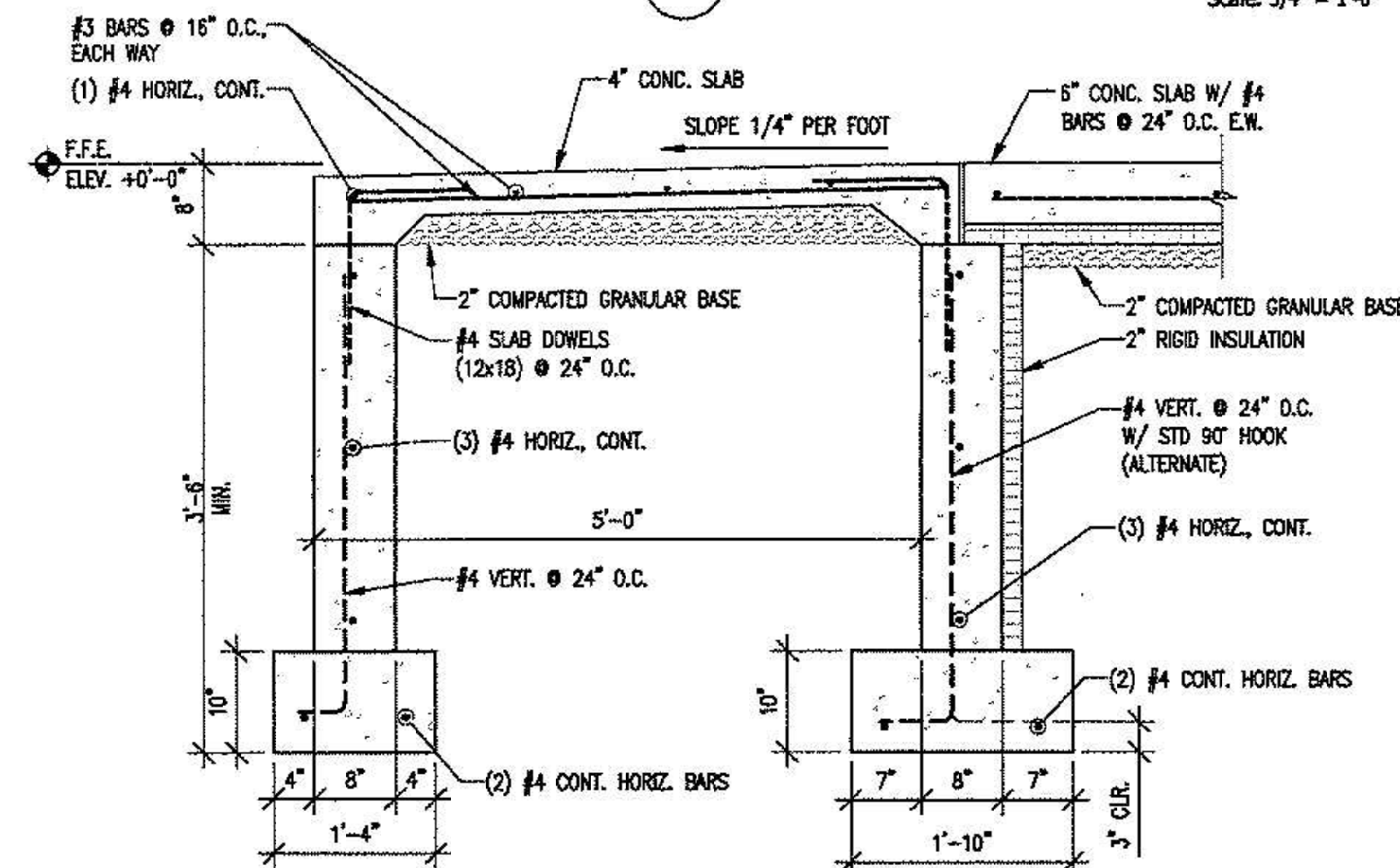
3 JAMB POST BRACE DETAIL  
Scale: 3/4" = 1'-0"



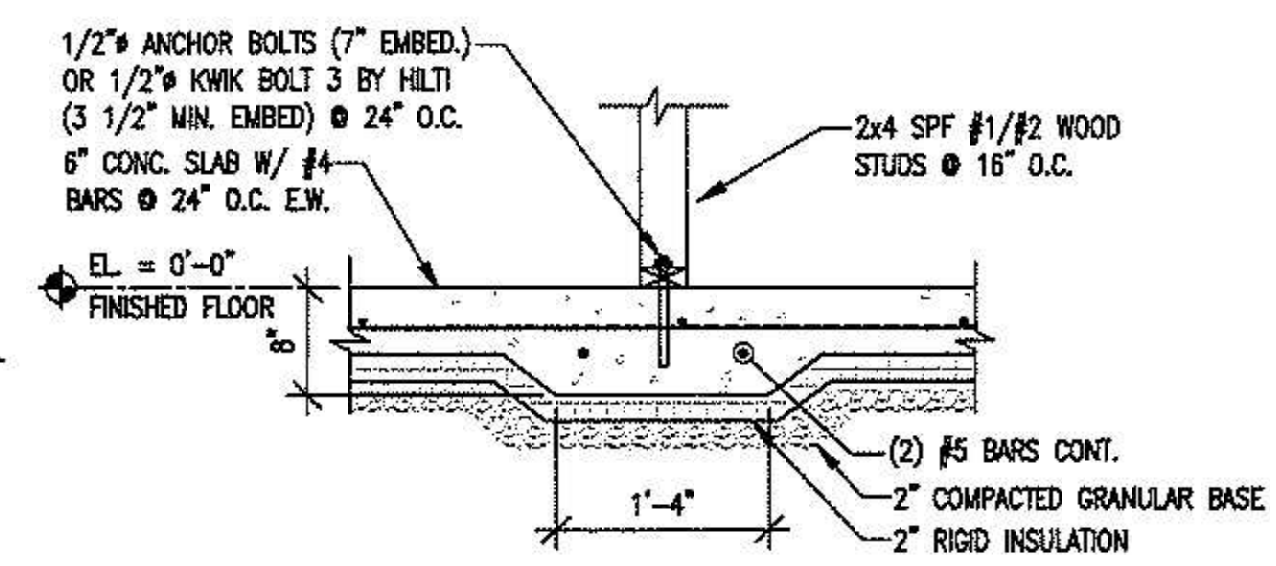
7 CANOPY ALONG EXISTING SECTION  
Scale: 3/4" = 1'-0"



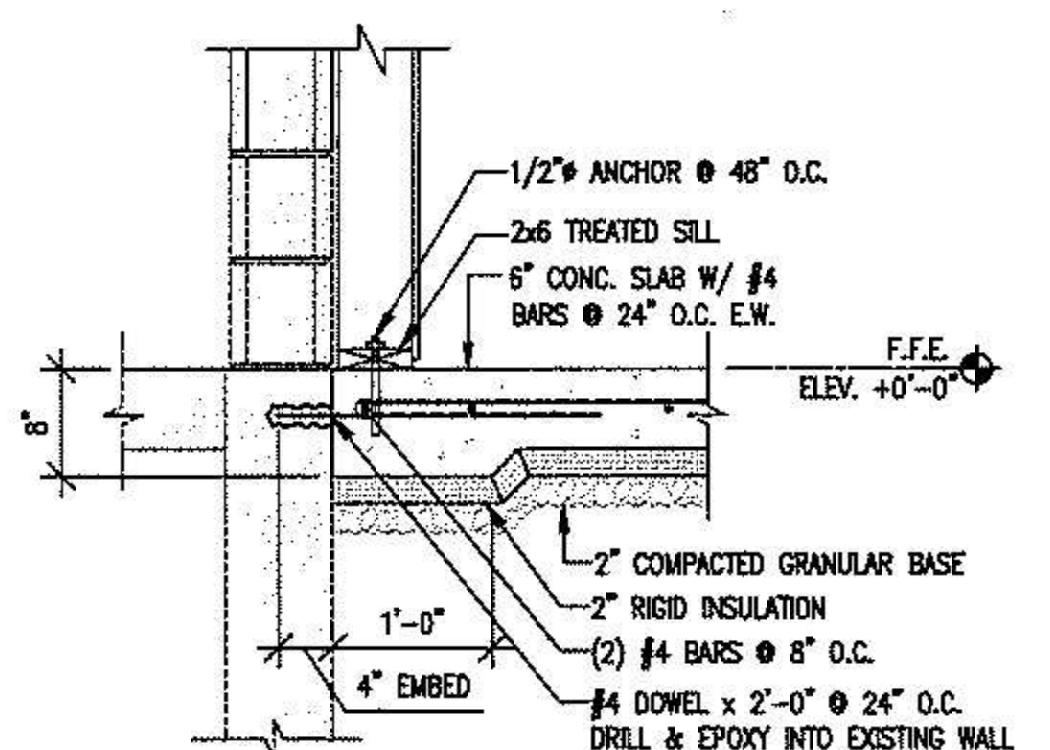
13 TYP. TRENCH DRAIN DETAIL  
Scale: 3/4" = 1'-0"



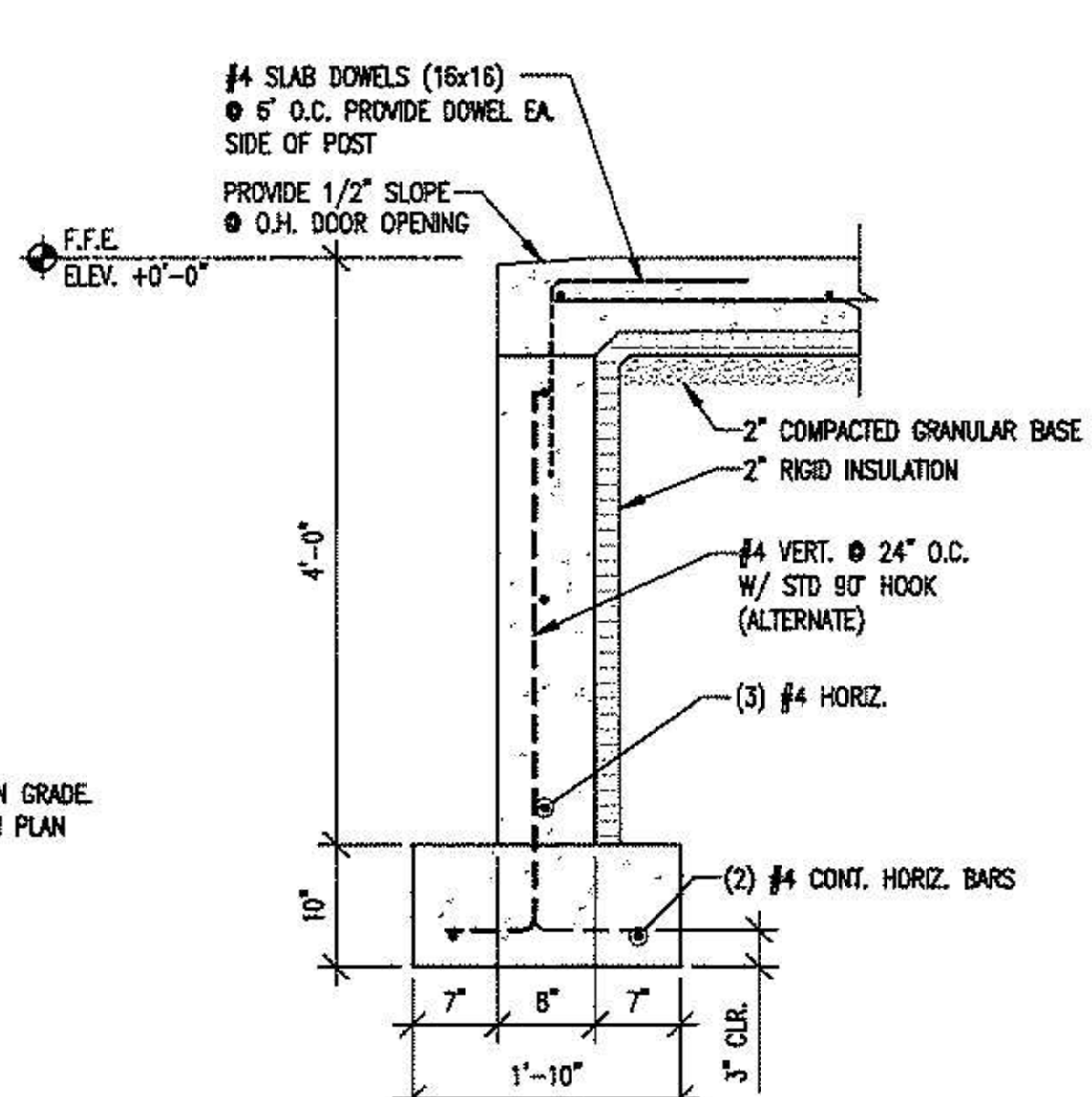
11 WALL SECTION @ STOOP  
Scale: 3/4" = 1'-0"



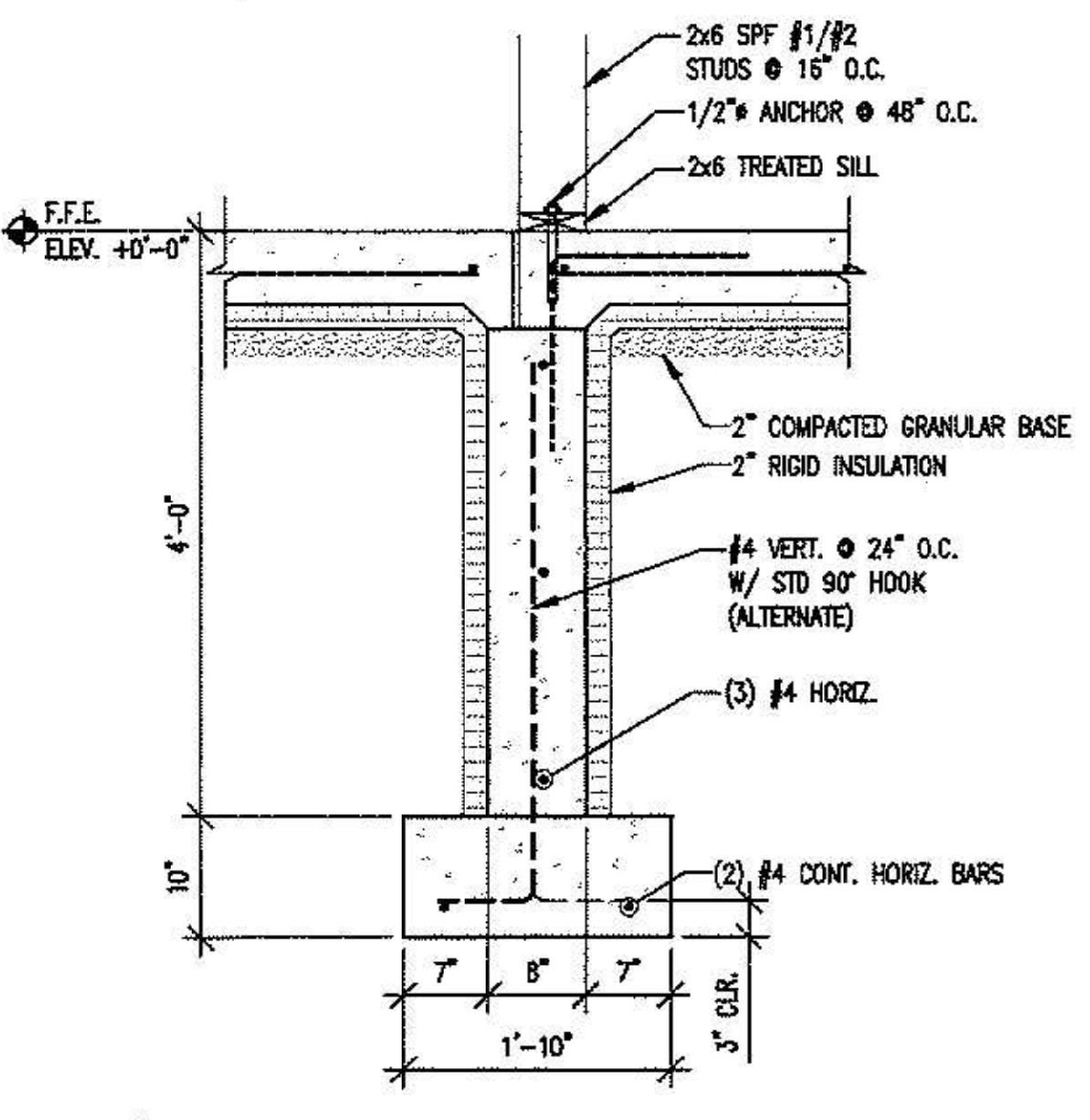
4 THICKENED SLAB DETAIL  
Scale: 3/4" = 1'-0"



5 THICKENED SLAB SECTION @ EXISTING  
Scale: 3/4" = 1'-0"



8 WALL SECTION @ O.H. DR.  
Scale: 3/4" = 1'-0"



12 WALL SECTION @ GARAGE WALL  
Scale: 3/4" = 1'-0"

373 COLLINS ROAD NE  
CEDAR RAPIDS, IA 52402  
PH: (319) 294-2739  
WWW.APEX-SE.COM

**APEX**  
STRUCTURAL

ENGINEERS & DESIGNERS

Date	Revision	Key Plan

**BUTLER COUNTY EMS ADDITION**  
76'x56'x14' BUILDING W/ 40'x32'x14' GARAGE  
610 OAK ST  
ALLISON, IA 50602

STRUCTURAL DETAILS

Drawn By: NHH  
Checked By: NVH  
Project No.: 21-290  
Date: 12/17/21

Sheet No.  
**S3**



A

B

C

D

E

F

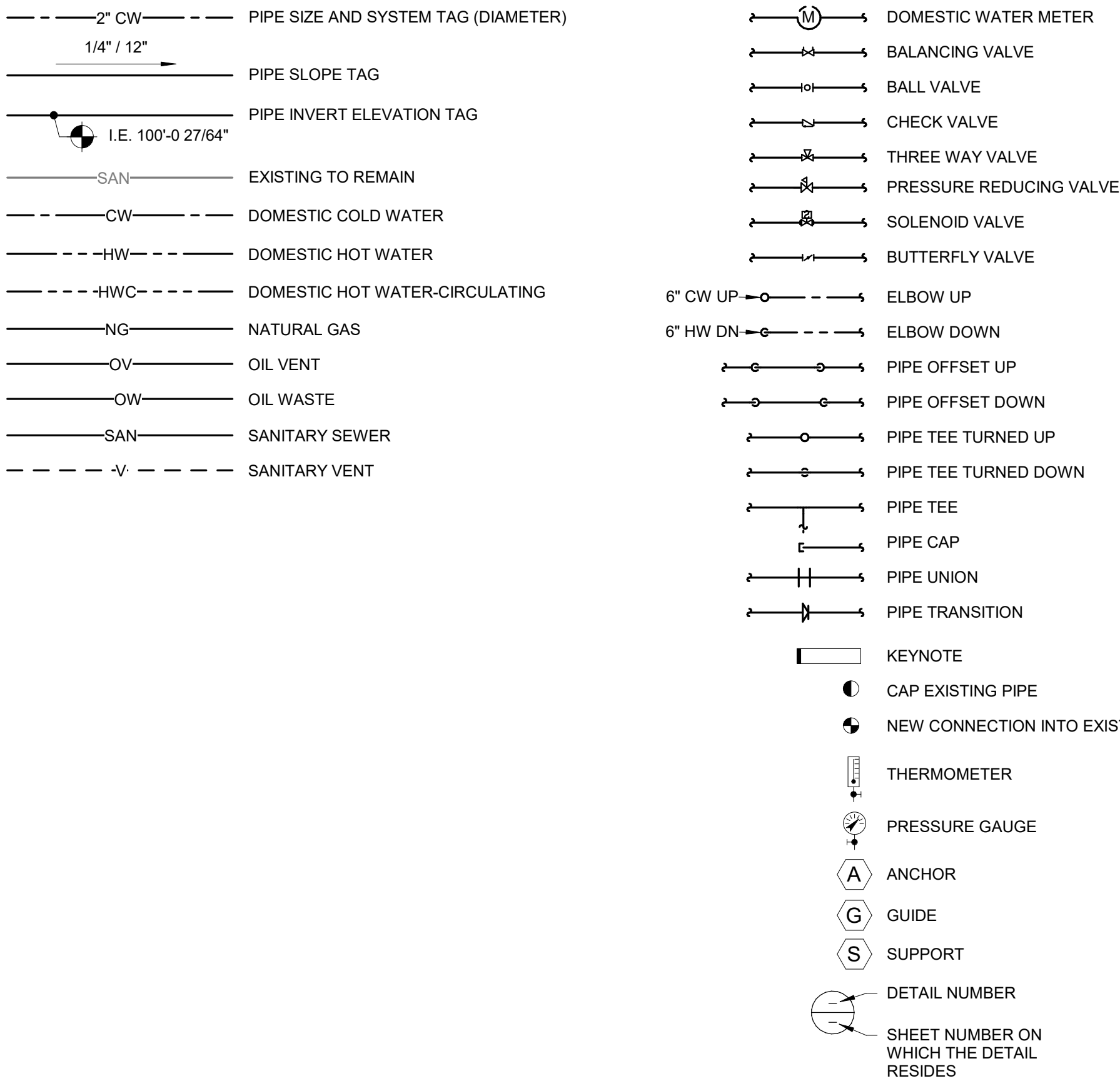
G

H

GENERAL PLUMBING ABBREVIATIONS

SYMBOLS		E		R	
& @ #	AND AT NUMBER or POUND	FCO	FLOOR CLEANOUT	RD	ROOF DRAIN
A		FD	FLOOR DRAIN	RECIRC	RECIRCULATE(ING)
ACU	AIR CONDITIONING UNIT	FDC	FIRE DEPARTMENT CONNECTION	REFR	REFRIGERATION
AD	AREA DRAIN	FPT	FEMALE PIPE THREAD	REQD	REQUIRED
ADJ	ADJUSTABLE/ADJACENT	FS	FLOOR SINK	RHC	REHEAT COIL
AFF	ABOVE FINISHED FLOOR	FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR	RPM	REVOLUTIONS PER MINUTE
AHU	AIR HANDLING UNIT	FTHD	FOOT HEAD OR PRESSURE DROP	RPZ	REDUCED PRESSURE ZONE
ALT	ALTERNATE	FW	FEEDWATER	S	
AMB	AMBIENT	FWP	FIRE WATER PUMP	SCH	SCHEDULE
AP	ACCESS PANEL	G		SCHM	SCHEMATIC
APPROX	APPROXIMATE(LY)	G	GAS	SEER	SEASONAL ENERGY EFFICIENCY RATIO
AR	ACID-RESISTANT	GA	GAUGE	SF	SQUARE FEET
AS	AIR SEPARATOR	GAL	GALLON	SHT	SHEET
ASSY	ASSEMBLY	GC	GENERAL CONTRACTOR	SK	SINK
ATM	ATMOSPHERE	GPD	GALLONS PER DAY	SP	SUMP PUMP OR STATIC PRESSURE
AUX	AUXILIARY	GPH	GALLONS PER HOUR	SPEC	SPECIFICATION(S)
AV	ACID VENT	GPM	GALLONS PER MINUTE	SQ IN	SQUARE INCH
AVG	AVERAGE	GV	GREASE VENT	SS	STAINLESS STEEL
AW	ACID WASTE	GWH	GAS FIRED WATER HEATER	STD	STANDARD
B		H		STBY	STANDBY
BAS	BUILDING AUTOMATION SYSTEM	H&CW	HOT AND COLD WATER	STL	STEEL
BFF	BELOW FINISHED FLOOR	HB	HOSE BIBB	SUCT	SUCTION
BFP	BACKFLOW PREVENTER	HG	MERCURY	SV	SAFETY VALVE
BLDG	BUILDING	HORIZ	HORIZONTAL	SYS	SYSTEM
BMS	BUILDING MANAGEMENT SYSTEM	HP	HORSEPOWER	SRV	SAFETY RELIEF VALVE
BOP	BOTTOM OF PIPE	HVAC	HEATING, VENTILATION, AIR CONDITIONING	T	
BTU	BRITISH THERMAL UNIT	HZ	HERTZ (FREQUENCY)	T	THERMOSTAT
BTUH	BRITISH THERMAL UNITS PER HOUR			TCC	TEMPERATURE CONTROL CONTRACTOR
C		ID	INSIDE DIAMETER	TD	TRENCH DRAIN
C	COMPRESSOR (AIR)	IE	INVERT ELEVATION	TEFC	TOTALLY ENCLOSED FAN COOLED
CAL	CALIBRATE	IN	INCHES	THRU	THROUGH
CAP	CAPACITY	IN WC	INCHES (WATER COLUMN)	TOP	TOP OF PIPE
CCR	CONCENTRIC REDUCER	INS	INSULATION	TP	TOTAL PRESSURE
CCW	COUNTER CLOCKWISE	INSTR	INSTRUMENT	TYP	TYPICAL
CIRC	CAST IRON PUMP	IP	IRON PIPE	U	
CIRC	CIRCULATING	IPS	IRON PIPE SIZE	UL	UNDERWRITERS LABORATORIES
CISP	CAST IRON SOIL PIPE	ISO	ISOMETRIC	UNO	UNLESS NOTED OTHERWISE
CL	CENTER LINE	J		UR	URINAL
CLG	CeILING	JS	JANITOR'S SINK	UTIL	UTILITY
CLR	CLEAR(ANCE)	K		V	
CLW	CLOCKWISE	K	KELVIN	VAC	VACUUM
CO	CLEANOUT	KW	KILOWATT	VBX	VALVE BOX
COND	CONDENSATE	KWH	KILOWATT HOUR	VD	VOLUME DAMPER
CONSTR	CONSTRUCTION	L		VEL	VELOCITY
CONT	CONTINUATION	LAV	LAVATORY	VERT	VERTICAL
CONTR	CONTRACTOR	LB(S)	POUND(S)	VFD	VARIABLE FREQUENCY DRIVE
COORD	COORDINATE	LWT	LEAVING WATER TEMPERATURE	VTR	VENT THRU ROOF
CP	CIRC PUMP	M		W	
CSS	CLINICAL SERVICE SINK	MAINT	MAINTENANCE	W/	WITH
CT	CONTROL	MAX	MAXIMUM	W/O	WITHOUT
CTRL	COPPER	MBH	BRITISH THERMAL UNIT (1000HR)	WB	WET BULB
CU	CUBIC FEET	MC	MECHANICAL CONTRACTOR	WC	WATER CLOSET
CU IN	CUBIC INCH	MCC	MOTOR CONTROL CENTER	WH	WATER HEATER OR WALL HYDRANT
D		MCA	MINIMUM CIRCUIT AMPS	WHA	WATER HAMMER ARRESTOR
°/DEG	DEGREE	MECH	MECHANICAL	WPD	WATER PRESSURE DROP
°C	DEGREES CELSIUS	MFR	MANUFACTURER	WT	WEIGHT
°F	DEGREES FAHRENHEIT	MIN	MINIMUM OR MINUTE	WTR	WATER
DB	DRY BULB	MISC	MISCELLANEOUS		
DDC	DIRECT DIGITAL CONTROLS	MOV	MOTOR OPERATED VALVE		
DEMO	DEMOLITION	MPT	MALE PIPE THREAD		
DF	DRINKING FOUNTAIN	N			
DIA	DIAMETER	NA	NOT APPLICABLE		
DIGRAM	DIAGRAM	NC	NORMALLY CLOSED		
DIP	DUCTILE IRON PIPE	NIC	NOT IN CONTRACT		
DN	DOWN	NO	NORMALLY OPEN		
DR	DRAIN	NOM	NOMINAL		
DV	DRAIN VALVE	NPT	NATIONAL PIPE THREAD		
DW	DSHWASHER	NTS	NOT TO SCALE		
DWG	DRAWING	O			
DWV	DRAIN WASTE & VENT	OD	OUTER DIAMETER		
E		OFCI	OWNER FURNISHED CONTRACTOR INSTALLED		
EA	EACH	OFOL	OWNER FURNISHED OWNER INSTALLED		
ECCR	ECCENTRIC REDUCER	ORD	OVERFLOW ROOF DRAIN		
EER	ENERGY EFFICIENCY RATIO	OST	OVERFLOW STORM		
EEW	EMERGENCY EYE WASH	P			
EF	ENERGY FACTOR	PG	PRESSURE GAUGE OR PROPYLENE GLYCOL		
ELEV	ELEVATION	PH	PHASE		
ELEC	ELECTRICAL	PLBG	PLUMBING		
EQ	EQUAL	PRV	PRESSURE RELIEF VALVE OR PRESSURE		
EQUIP	EQUIPMENT	PSIG	POUNDS PER SQUARE INCH ABSOLUTE		
EQUIV	EQUIVALENT				
ES	EMERGENCY SHOWER / EYE WASH				
ET	EXPANSION TANK				
EW	ELECTRIC WATER COOLER				
EWV	ELECTRIC WATER HEATER				
EWHT	ENTERING WATER TEMPERATURE				
EX	EXISTING				

PLUMBING SYMBOLS LIST



PLUMBING

- UNLESS NOTED OTHERWISE: LIGHT LINES DENOTE EXISTING PIPING, OR EQUIPMENT WHICH IS TO REMAIN. BOLD LINES INDICATE NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.
- PLUMBING SHOWN IS IN SCHEMATIC FORM. NOT ALL RISERS AND DROPS ARE SHOWN. PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCE WITH OTHER TRADES. THE CONTRACTOR SHALL PROVIDE COMPLETE FULLY FUNCTIONAL SYSTEMS.
- PROVIDE ACCESSIBLE ISOLATION VALVES AT ALL BRANCH CONNECTIONS TO MAINS AND PIPING FIXTURE GROUPS. COORDINATE VALVE LOCATIONS WITH ACCESSIBLE CEILINGS.
- REFER TO PLUMBING FIXTURE ROUGH-IN SCHEDULE FOR CONNECTION SIZES AT INDIVIDUAL FIXTURES.
- PROVIDE WATER HAMMER ARRESTORS FOR EACH NEW PLUMBING FIXTURE OR GROUP OF FIXTURES. SIZE AND LOCATION REQUIREMENTS SHALL BE AS PER PDI STANDARD PDI-WH-201.
- ALL EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED TO BE EASILY ACCESSIBLE.
- PLUMBING WORK SHALL BE COORDINATED WITH OTHER TRADES, INCLUDING BUT NOT LIMITED TO DUCTWORK, ELECTRICAL EQUIPMENT, PIPING AND FIRE PROTECTION. SPACE ABOVE CEILING IS LIMITED AND SHALL BE COORDINATED WITH OTHER TRADES.
- ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
- CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.
- MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC CODE REQUIRED CLEARANCES.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GENERAL CONTRACTOR (GC) OR CONSTRUCTION MANAGER.
- PROTECT NEW WORK FROM DAMAGE OR DECONTAMINATION. PROVIDE TEMPORARY PROTECTIVE CAPPING OR TAPED POLYETHYLENE ENCLOSURES OVER OPEN DUCTWORK AND PIPING ENDS AND EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING MECHANICAL SYSTEMS PRIOR TO PLACING THEM IN SERVICE.
- IN A NEAT AND WORKMANLIKE MANNER: PATCH ANY REMAINING OPENINGS AND FILL EXCESSIVE GAPS. REWORK AND REFINISH TO MATCH ADJACENT STRUCTURES. FLASH AND SEAL ALL MECHANICAL AND ELECTRICAL PENETRATIONS THRU WALLS, CEILINGS AND FLOORS WITH METAL FRAMEWORK OR ESCUTCHEONS. ALL OPENINGS SHALL BE PROPERLY SEALED SO AS TO MEET FIRE RATING NEEDS.

BUTLER COUNTY PUBLIC  
HEALTH ADDITION

610 Oak Street, Allison, IA 50602

DRAWN BY	CVE
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2024
PROJECT NUMBER	2112202420
FIELD BOOK	

PLUMBING  
GENERAL  
INFORMATION

P000

4

5

6

1

2

3

6

5

4

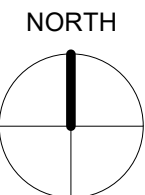
3

2

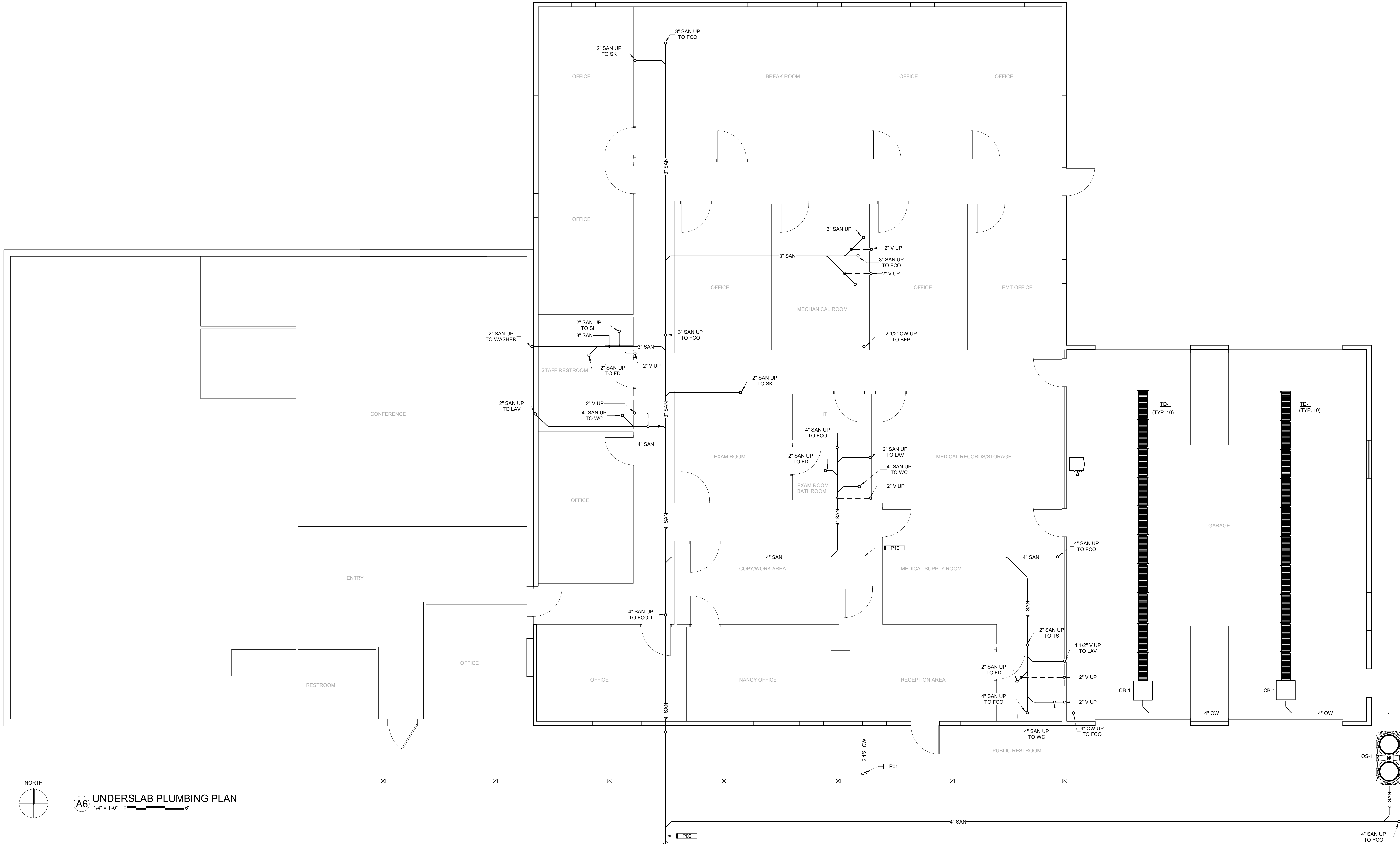
1



Autodesk Docs: 2112202420 Butler Co Public Health  
P100-2112202420-MEP-P02.dwg  
08/15/2022 7:54:47 AM  
Autodesk Revit 2021



A6 UNDERSLAB PLUMBING PLAN  
1/4" = 1'-0" 0 6'



KEYNOTES	
KEY	NOTE
P01	DOMESTIC WATER ROUTED UNDERSLAB TO THE MECHANICAL ROOM. COORDINATE DEPTH WITH CIVIL.
P02	SANITARY PIPING ROUTED UNDERSLAB TO EXTERIOR OF BUILDING. TIE INTO EXISTING SANITARY ON EXTERIOR OF BUILDING. COORDINATE WITH CIVIL.
P10	ROUTE DOMESTIC COLD WATER A MINIMUM OF 18" ABOVE SANITARY PIPING. INSTALL ELBOWS AS REQUIRED TO ALLOW FOR THE 18" CLEARANCE.

BUTLER COUNTY PUBLIC  
HEALTH ADDITION

610 Oak Street, Allison, IA 50602

UNDER SLAB  
PLUMBING PLAN

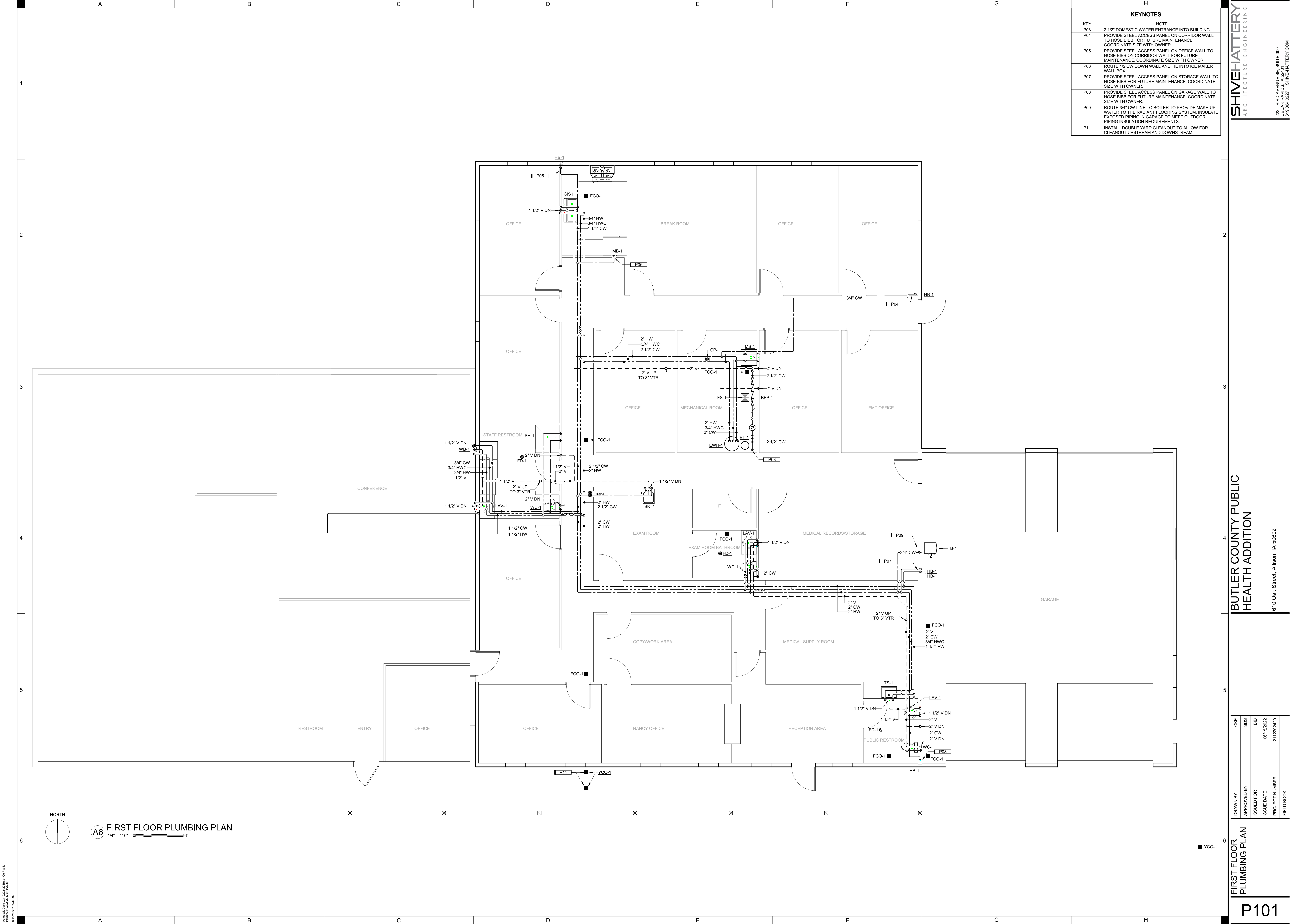
DRAWN BY	CYE
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	

P100

SHIVE-HATTERY  
ARCHITECTURE + ENGINEERING

222 THIRD AVENUE SE, SUITE 300  
CEDAR RAPIDS, IA 52401  
319.364.0227 | SHIVEHATTERY.COM





KEYNOTES	
KEY	NOTE
P03	2 1/2" DOMESTIC WATER ENTRANCE INTO BUILDING.
P04	PROVIDE STEEL ACCESS PANEL ON CORRIDOR WALL TO HOSE BIBB FOR FUTURE MAINTENANCE. COORDINATE SIZE WITH OWNER.
P05	PROVIDE STEEL ACCESS PANEL ON OFFICE WALL TO HOSE BIBB ON CORRIDOR WALL FOR FUTURE MAINTENANCE. COORDINATE SIZE WITH OWNER.
P06	ROUTE 1/2 CW DOWN WALL AND TIE INTO ICE MAKER WALL BOX.
P07	PROVIDE STEEL ACCESS PANEL ON STORAGE WALL TO HOSE BIBB FOR FUTURE MAINTENANCE. COORDINATE SIZE WITH OWNER.
P08	PROVIDE STEEL ACCESS PANEL ON GARAGE WALL TO HOSE BIBB FOR FUTURE MAINTENANCE. COORDINATE SIZE WITH OWNER.
P09	ROUTE 3/4" CW LINE TO BOILER TO PROVIDE MAKE-UP WATER TO THE RADIANT FLOORING SYSTEM. INSULATE EXPOSED PIPING IN GARAGE TO MEET OUTDOOR PIPING INSULATION REQUIREMENTS.
P11	INSTALL DOUBLE YARD CLEANOUT TO ALLOW FOR CLEANOUT UPSTREAM AND DOWNSTREAM.

DRAWN BY	CYE
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	



Autodesk Docs/2112202402/Butler Co Public Health/2112202402/MEP/2021.rvt  
08/15/2022 7:26:48 AM

1  
2  
3  
4  
5  
6

A

B

C

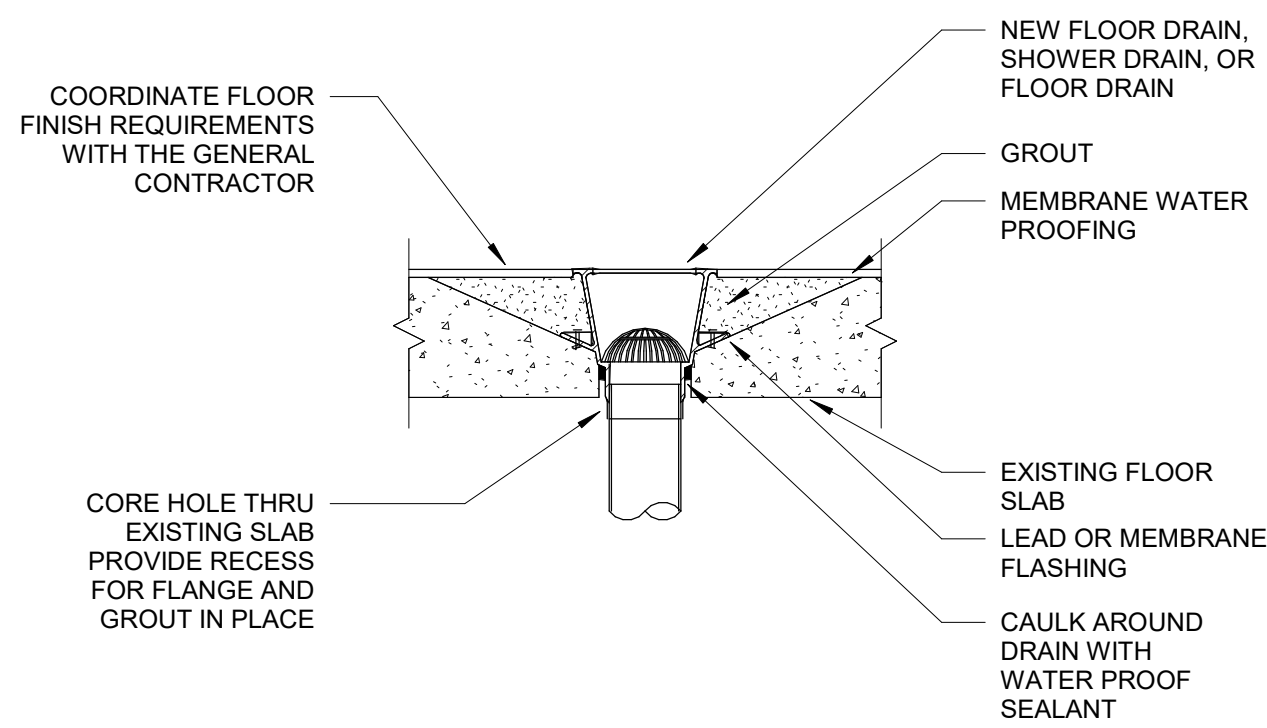
D

E

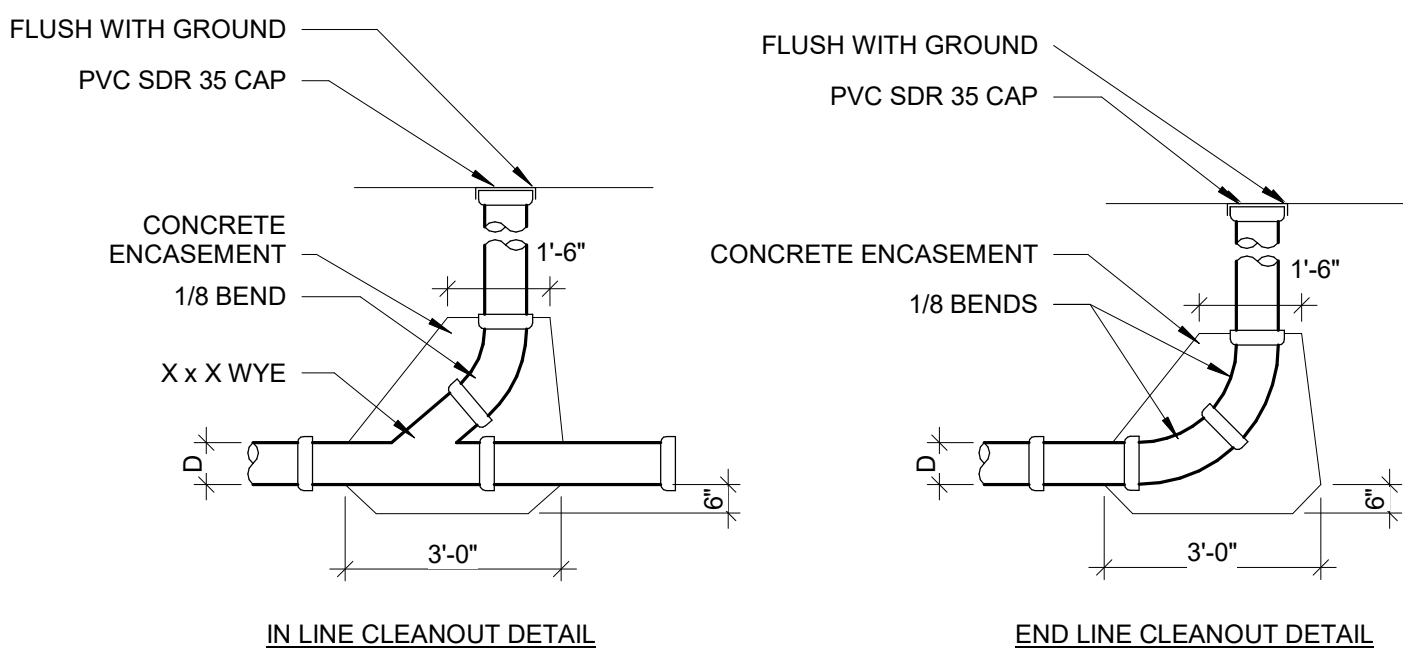
F

G

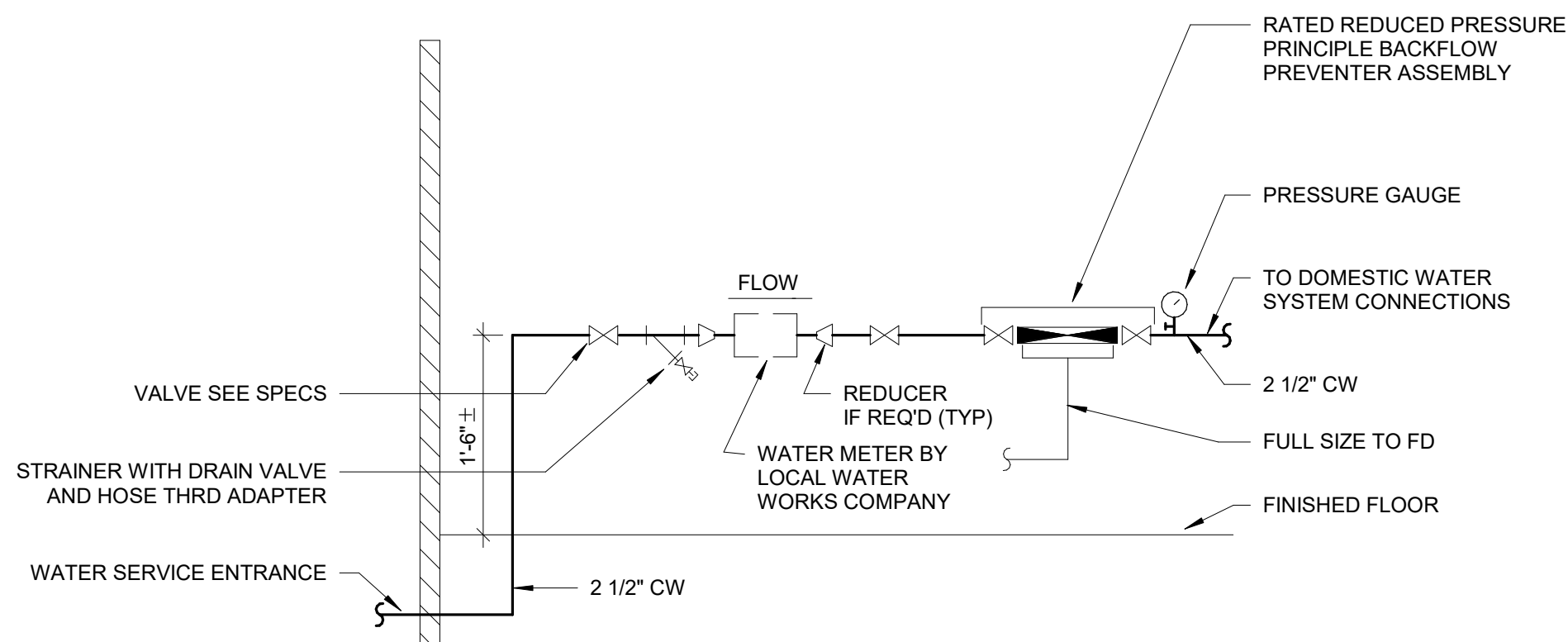
H



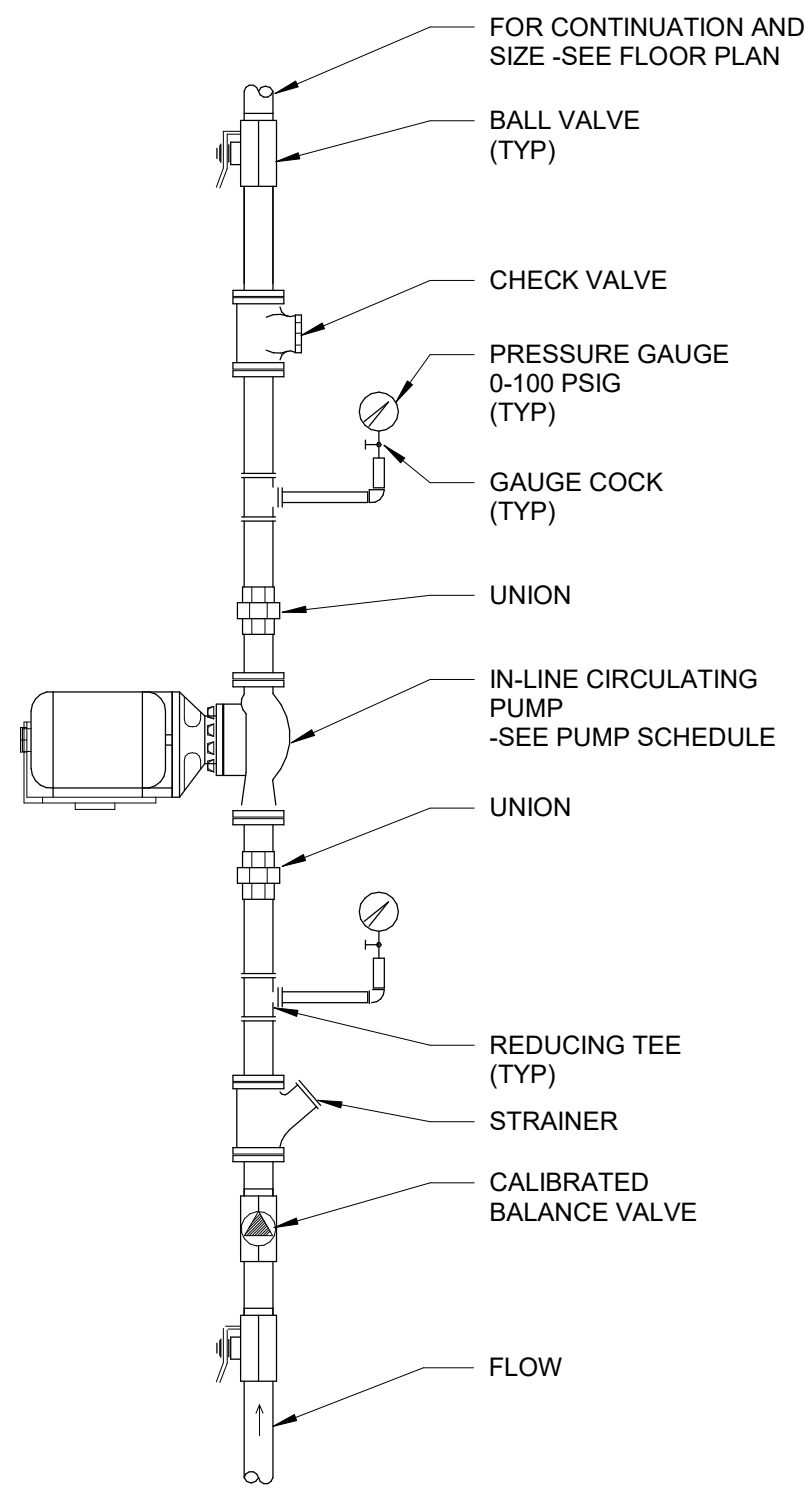
D4 FLOOR DRAIN PENETRATION DETAIL  
NOT TO SCALE



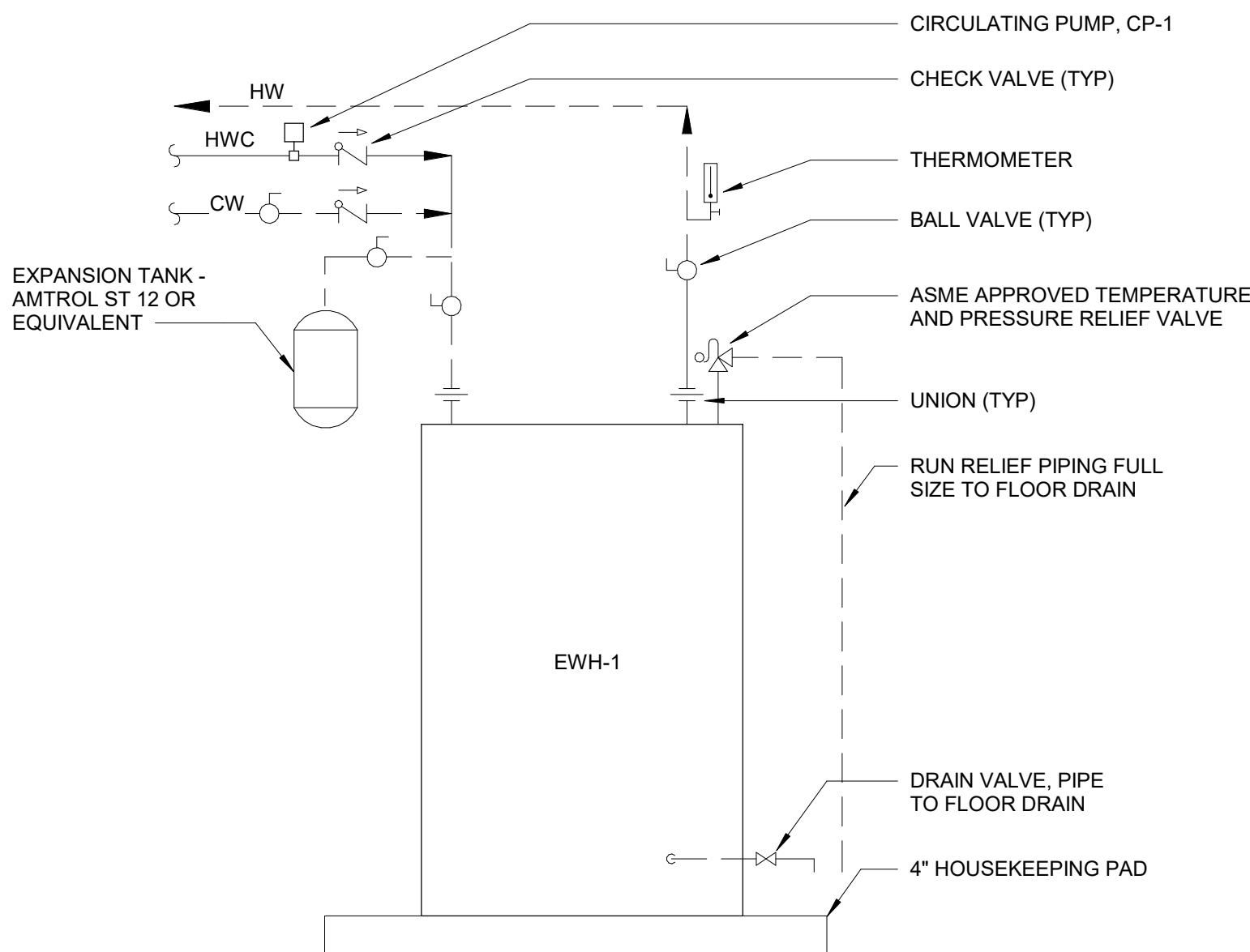
D5 CLEANOUT DETAILS  
NOT TO SCALE



D6 DOMESTIC WATER METERING DETAIL  
NOT TO SCALE



G5 CIRCULATING PUMP DETAIL  
NOT TO SCALE



G6 ELECTRIC WATER HEATER PIPING DETAIL  
NOT TO SCALE

BUTLER COUNTY PUBLIC  
HEALTH ADDITION

610 Oak Street, Allison, IA 50602

DRAWN BY	CYE
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202402
FIELD BOOK	

PLUMBING  
DETAILS

P500

SHIVE-HATTERY  
ARCHITECTURE+ENGINEERING

222 THIRD AVENUE SE, SUITE 300  
CEDAR RAPIDS, IA 52401  
515.364.0227 | SHIVE-HATTERY.COM

1  
2  
3  
4  
5  
6



PLUMBING FIXTURE SCHEDULE															
TYPE MARK	FIXTURE TYPE	MANUFACTURER	MODEL	MATERIAL	DESCRIPTION	FAUCET/FLUSH VALVE				PIPE CONNECTIONS				ACCESSORIES	
						MANUFACTURE R	MODEL NO.	FINISH	DESCRIPTION	SANITARY ROUGH-IN PIPE DIAMETER	VENT ROUGH-IN PIPE DIAMETER	COLD WATER ROUGH-IN PIPE DIAMETER	HOT WATER ROUGH-IN PIPE DIAMETER	COMMENTS	
CB-1	CATCH BASIN	WATTS	CB-2424	POLYPROPYLENE	CATCH BASIN SHALL BE FRAME ANCHORED WITH GRATING CONFORMING TO ASTM SPECIFICATION A536-84, GRADE 80-85-06. LOCKDOWNS TO SUIT CLASS D PER EN1433. PROVIDE WITH STAINLESS STEEL TRASH BASKET.					4"	0"				
FCO-1	FLOOR CLEANOUT	WATTS	CO-1200-R	EPOXY COATED CAST IRON	EPOXY COATED CAST IRON FLOOR CLEANOUT WITH 5" ROUND ADJUSTABLE GASKETED HEAVY DUTY STAINLESS STEEL TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB OUTLET.					4"					
FD-1	FLOOR DRAIN - ROUND	ZURN	Z-415-B	EPOXY COATED CAST IRON	MEMBRANE CLAMP, FLASHING COLLAR, WEEP HOLES, HUB OUTLET WITH GASKETED CONNECTION, 8" DIAMETER ADJUSTABLE POLISHED NICKEL BRONZE STRAINER, VANDAL PROOF. SET TOP OF STRAINER FLUSH WITH FINISHED FLOOR.					2"	2"				
FS-1	FLOOR SINK	WATTS	FS-730	WHITE ACID RESISTANT PORCELAIN ENAMEL COATED	12" SQUARE, 6" DEEP SANITARY FLOOR SINK WITH WHITE ACID RESISTANT PORCELAIN ENAMEL COATED INTERIOR, LOOSE SET PORCELAIN ENAMEL COATED CAST IRON GRATE, POLYPROPYLENE DOME BOTTOM STRAINER AND NOT HUB OUTLET.					2"	2"				
HB-1	HOSE BIBB	WATTS	FH	BRASS BODY	FROST-PROOF AUTOMATIC DRAINING WALL HYDRANTS DESIGNED FOR FREEZE PROTECTION. POSITIVE SEAT WATER SHUT-OFF. 3/4" HOSE OUTLET. HYDRANT TO BE MANUFACTURED WITH METAL HANDLE.							1/2"			
IMB-1	ICE MAKER OUTLET BOX	GUY GRAY	MB1HAAB	N/A	20GA. WHITE POWDER COATED OUTLET BOX WITH 1/4 TURN BALL VALVE AND WATER HAMMER ARRESTOR. MOUNT AT 42" AFF.					0"	0"	1/2"	0"		
LAV-1	LAVATORY - ADA	ELKAY	BLRQ1560	STAINLESS STEEL	ELKAY LUSTERTONE CLASSIC STAINLESS STEEL SINK 15" X 15" X 6-1/8". SINGLE BOWL DROP-IN BAR SINK WITH QUICK-CLIP. SINK IS MANUFACTURED FROM 18 GAUGE 304 STAINLESS STEEL WITH LUSTERTONE FINISH, CENTER DRAIN PLACEMENT, AND BOTTOM ONLY PADS. THREE HOLE DRILLING CONFIGURATION. PROVIDE GRID P-TRAP AND CLEANOUT.	DELTA	2538-MPU-DST	CHROME	THREE HOLE MOUNT CHROME FAUCET WITH MAX FLOW RATE OF 1.2 GPM @ 60 PSI. DIAMOND COATED CERAMIC CARTRIDGE, HOT AND COLD STEMS INTERCHANGEABLE, 3/8" O.D. STRAIGHT PEX SUPPLY TUBES, AND 1/4 TURN HANDLE STOPS. METAL DRAIN WITH POP-UP TYPE FITTING WITH PLATED FLANGE AND STOPPER. PROVIDE GRID DRAIN AND P-TRAP WITH CLEANOUT.	1 1/2"	1 1/2"	1/2"	1/2"	PROVIDE WADE CARRIER, MODEL AS REQUIRED. ENTIRE CARRIER TO BE CONCEALED IN WALL.	
MS-1	FLOOR MOUNTED SERVICE SINK	FIAT	MSB 2424	MOLDED-STONE	OUTSIDE DIMENSIONS OF 24"x24"x10". THE UNIT SHALL HAVE 10" HIGH WALLS WITH NOT LESS THAN 1" WIDE. A COMBINATION DOME STRAINER AND LINT BASKET MADE FROM STAINLESS STEEL SHALL BE INCLUDED WITH THE FACTORY INSTALLED DRAIN BODY FOR CAULKED JOINT TO ACCEPT 3" PIPE.	FIAT	830-AA	CHROME	CHROME PLATED FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIN HOOK 3/4" HOSE THREAD ON SPOUNT. BODY INLETS 8" CENTER TO CENTER. FOUR ARM HANDLES. VAVLES CONTAIN RENEWABLE HUB, RENEWABLE SEATS, SWIVEL DISCS, ENCASED WASHERS, AND BRASS WASHER SCREWS.	3"	2"	3/4"	3/4"		
OS-1	OIL/SAND SEPARATOR	STRIEM	OS-100		4" PLAIN END INLET/OUTLET, 3" PLAIN END VENT, 100 GPM MAX FLOW RATE. 250 GAL LIQUID CAPACITY, 144 GAL OIL CAPACITY. SNAP-IN FLOW CONTROL, AND BUILT-IN ADAPTER FOR UP TO 5" OF ADJUSTABILITY. FOR ON THE FLOOR OR BURIED APPLICATIONS.										
SH-1	SHOWER	BRADLEY	WS-1WCA-ADA	FIBER GLASS	INDIVIDUAL COVERALL WALL SHOWER, 18 GAUGE 304 STAINLESS STEEL, 80" SHOWERHEAD HEIGHT, 60" STAINLESS STEEL FLEXIBLE HOSE. PROVIDE WITH PRESSURE BALANCING VALVE FOR TEMPERED WATER AND PROVIDE VERTICAL SHROUD TO CEILING.	DELTA	ARVO	CHROME	120" MAXIMUM HANDLE ROTATION. SOLID BRASS FABRICATED BODY. DETACHABLE HAND SHOWER HEAD.	2"	1 1/2"	1/2"	1/2"		
SK-1	KITCHEN SINK - DOUBLE BASIN - ADA	ELKAY	DLRQ332210	STAINLESS STEEL	ELKAY LUSTERTON CLASSIC STAINLESS STEEL 33" X 22" X 10-1/8". EQUAL DOUBLE BOWL DROP-IN SINK WITH QUICK-CLIP. SINK IS MANUFACTURED FROM 18 GAUGE 304 STAINLESS STEEL WITH A LUSTERTON FINISH, CENTER DRAIN PLACEMENT, AND FULL SPRAY SIDE AND BOTTOM. FOUR HOLE DRILLING CONFIGURATION.	ELKAY	LK2478CR	CHROME	THREE HOLE DECK MOUNT KITCHEN FAUCET WITH SIDE SPRAY CHROME FLOW RATE OF 1.5 GPM. BRASS WITH CERAMIC DISC VALVE AND REQUIRES 4 FAUCET HOLES.	2"	1 1/2"	1/2"	1/2"	PROVIDE ELKAY DRAIN MODEL NUMBER LK99.	
SK-2	SINGLE BOWL SINK - ADA	ELKAY	LRAD221955	STAINLESS STEEL	SINGLE BOWL DROP-IN ADA SINK MANUFACTURED FROM 18 GAUGE 304 STAINLESS STEEL WITH A LUSTROUS SATIN FINISH, REAR CENTER DRAIN PLACEMENT, AND BOTTOM ONLY PADS. PROVIDE TWO HOLE DRILLING CONFIGURATION. PROVIDE GRID DRAIN AND P-TRAP WITH CLEANOUT.	ELKAY	LK406GN04T4	CHROME	4" CENTRESET AND EXPOSED DECK FAUCET WITH 4" GOOSENECK SPOUT AND 4" WRISTBLADE CHROME HANDLES. FAUCET HAS FLOW RATE OF 1.5 GPM AND IS MADE OF CHROME-PLATED BRASS WITH A TURN CERAMIC DISC VALVE. REQUIRES 2 FAUCET HOLES.	2"	1 1/2"	1/2"	1/2"		
TD-1	TRENCH DRAIN	ZURN	886	HIGH DENSITY POLYETHYLENE	TRENCH DRAIN, 80"x6-1/4" WIDE REVEAL, 4" THROAT. DUCTILE IRON SLOTTED GRATE CONFORMING TO ASTM SPECIFICATION A536-84, GRADE 80-85-06. IRON GRATE RATED CLASS D PER DIN EN1433 TOP LOAD CLASSIFICATIONS, 1/2" WIDE SLOTS, 3/4" BEARING DEPTH, 1/4" HEAVY-GRATE LOCKDOWN BARS ARE TO BE INTEGRAL TO THE FRAME. POWDER COATED FINISH.					4"	2"				
TS-1	TUB SINK	MUSTEE	19CF	THERMOPLASTICS	WHITE ONE-PIECE MOLDED CONSTRUCTION TUBE SINK. INCLUDES FAUCET WITH 6" SWING SPOUT, TWO 20" FLEXIBLE SUPPLY LINES AND SEALANT TAPE. STANDARD 1-1/2" P-TRAP WITH 12" TAILPIECE. INTEGRALLY MOLDED DRAIN ASSEMBLY, STOPPER AND HEAVY GAUGE FINISHED STEEL LEGS WITH BUILT-IN LEVERS. 18 GALLON CAPACITY TUB, 13" DEEP. MEETS ANSI Z 124-2011.					2"	1 1/2"	1/2"	1/2"		
WB-1	WASHER WALL BOX	GUY GRAY	82379	PLASTIC	FIRE RATED PLASTIC WASHING MACHINE OUTLET BOX WITH SINGLE-LEVER WATER HAMMER ARRESTER VALVES.					2"	2"	3/4"	3/4"	INCLUDES 2 VAVLES, DUPLEX RECEPTACLE O-RING, AND THREADED DRAIN FITTING.	
WC-1	WATER CLOSET - FLOOR MOUNT - TANK TYPE - ADA	GERBER	GWS21518	WHITE VITREOUS CHINA	GERBER VITREOUS CHINA WATER CLOSET WITH COMBINATION BOWL AND TANK. 3" FLUSH VALVE. FLUIDMASTER 400A FILL VALVE, EXTRA LARGE DUAL FED SIPHON JETS, 100% GLAZED 2" TRAPWAY, DOUBLE NUT AND MULTI-POINT TANK-TO-BOWL MOUNTING SYSTEM, COLOR MATCHED METAL TANK LEVER. PROVIDE 2155CT HEAVY DUTY WHITE OPEN FRONT ANTIMICROBIAL SEAT WITH SELF-SUSTAINING HINGE.					4"	2"	1"			
YCO-1	YARD CLEANOUT	WATTS	CO-1200-R	EPOXY COATED CAST IRON	EPOXY COATED CAST IRON FLOOR CLEANOUT WITH 5" ROUND ADJUSTABLE GASKETED HEAVY DUTY STAINLESS STEEL TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB OUTLET.					4"					

WATER HEATER SCHEDULE - ELECTRIC								
REMARKS: 1. DISCONNECT PROVIDED AND INSTALLED BY E.C. 2. INSTALL WATER HEATER AND EXPANSION TANK ABOVE CEILING. SEE P500 FOR WATER HEATER PIPING DETAIL. 3. INSTALL ON 4" CONCRETE EQUIPMENT PAD.								
MARK	STORAGE (GAL)	RECOVERY (GPH)	WATER IN (°F)	WATER OUT (°F)	ELECTRICAL DATA		DESIGN BASIS	REMARKS
EWH-1	50.0	50	40	140	TOTAL KW	VOLTS PHASE	QA SMITH DRE-92-12	XXX














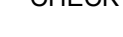
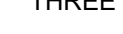
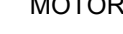









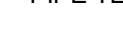
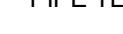









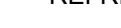




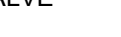

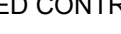
































HOT WATER CIRCULATION PUMP SCHEDULE													
REMARKS: 1. INSTALL WITH ALL APPURTENANCES CALLED OUT IN CIRCULATING PUMP DETAIL G5/P500. 2. PROVIDE AUTOMATIC TIMER KIT, 115/120 VAC, 60HZ, 10.													
MARK	SYSTEM SERVED	TYPE	GPM	HEAD (FT)	SHUTOFF HEAD (FT)	MOTOR DATA		ELECTRICAL DATA				DESIGN BASIS	REMARKS
						HP	RPM	VOLTS	PHASE	CONTROL OR STARTER	CONTROLLER OR STARTER FURNISHED / INSTALLED	DISCONNECT FURNISHED / INSTALLED	
CP-1	DOMESTIC HOT WATER	IN-LINE	12	5.00	27.30	1/6	3600	120	1	MS	DIV 26 / DIV 26	XXX	BELL & GOSSETT PL100 1

PLUMBING EXPANSION TANK SCHEDULE					
REMARKS: 1. INSTALL PER MANUFACTURERS RECOMMENDATIONS.					
MARK	SYSTEM SERVED	TYPE	TANK CAPACITY (GAL)	ACCEPTANCE CAPACITY (GAL)	DESIGN BASIS
ET-1	EWH-1	IN-LINE	4.4	3.2	AMTROL ST-12

DRAWN BY	CVE
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	



[illegible]

MECHANICAL SYMBOLS LIST	
 8" CHWS	PIPE SIZE, SYSTEM, AND FLOW TAG (DIAMETER)
 CHWS	EXISTING TO REMAIN
 CHWS	TO BE DEMOLISHED
 COND	CONDENSATE
 HWS	HEATING WATER SUPPLY
 HWR	HEATING WATER RETURN
 NG	NATURAL GAS
 RL	REFRIGERANT-LIQUID
 RS	REFRIGERANT-SUCTION
	BALANCING VALVE
	BALL VALVE
	CHECK VALVE
	THREE WAY VALVE
	MOTORIZED CONTROL VALVE
	THREE WAY MOTORIZED CONTROL VALVE
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
	BUTTERFLY VALVE
	ELBOW UP
	ELBOW DOWN
	PIPE OFFSET UP
	PIPE OFFSET DOWN
	PIPE TEE TURNED UP
	PIPE TEE TURNED DOWN
	PIPE TEE
	PIPE CAP
	PIPE UNION
	PIPE TRANSITION
 12x12 SA UP	SQ. OR RECT. ELBOW TURNED UP W/ TAG
 12x12 SA DN	SQ. OR RECT. ELBOW TURNED DOWN W/ TAG
 12e SA UP	ROUND ELBOW TURNED UP W/ TAG
 12e SA DN	ROUND ELBOW TURNED DOWN
	FLEXIBLE DUCT
	45° TAP BRANCH TAKE-OFF
	CONICAL TAP ROUND BRANCH TAKE-OFF
	CONICAL TAP ROUND BRANCH TAKE-OFF W/ MANUAL VOLUME DAMPER
	DOUBLE SIDED TRANSITION
	SINGLE SIDED TRANSITION
	SQ. OR RECT. ELBOW WITH TURNING VANES (45° AND 90°)
	SQ. OR RECT. TEE WITH TURNING VANES
	RADIUS ELBOW (45° AND 90°)
	MANUAL VOLUME DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	FIRE/SMOKE DAMPER
	MOTORIZED DAMPER
	DUCT SMOKE DETECTOR
 KEYNOTE	KEYNOTE
	CAP EXISTING PIPE OR DUCT
	NEW CONNECTION INTO EXISTING PIPE OR DUCT
	AIR FLOW ARROW POSITIVE PRESSURE
	AIR FLOW ARROW NEGATIVE PRESSURE
	CARBON DIOXIDE SENSOR
	CARBON MONOXIDE SENSOR
	NITROGEN DIOXIDE SENSOR
	PRESSURE SENSOR
	TEMPERATURE SENSOR
	THERMOSTAT
	HUMIDISTAT OR HUMIDITY SENSOR
	TRAP
	THERMOMETER
	PRESSURE GAUGE
	ANCHOR
	GUIDE
	SUPPORT
	DETAIL NUMBER
	SHEET NUMBER ON WHICH THE DETAIL RESIDES
	TYPE - SEE BELOW
	ID. NO. - SEE SCHEDULE
	NECK SIZE IN INCHES (ROUND SHOWN)
	AIR FLOW (CFM)
	DIFFUSER, GRILLE, REGISTER NOTATIONS
	CD = CEILING DIFFUSER
	RR = RETURN REGISTER
	EG = EXHAUST DIFFUSER
	SG

MECHANICAL DEMOLITION		MECHANICAL PIPING		MECHANICAL DUCTWORK	
1.	THIS DRAWING DIAGRAMMATICALLY REPRESENTS THE LAYOUT OF EXISTING CONDITIONS WITH MAJOR MECHANICAL AND ELECTRICAL COMPONENTS. THEY ARE NOT INTENDED TO SHOW ACCESSORIES OR INCIDENTALS COMMON TO EQUIPMENT INDICATED, THOUGH THESE ITEMS ARE TO BE REMOVED. ACCESSIBILITY TO DEMOLITION ITEMS SHALL NOT BE INFERRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD IDENTIFICATION OF SUCH ITEMS TO EXISTING CONDITIONS, PRIOR TO BID SUBMISSION.	1.	PIPING IS SHOWN IN SCHEMATIC FORM, ROUTE AS REQUIRED FOR CLEARANCE, VERIFY ROUTING AND CLEARANCES AND COORDINATE WITH OTHER TRADES PRIOR TO FABRICATION. THE CONTRACTOR SHALL PROVIDE COMPLETE FULLY FUNCTIONAL SYSTEMS.	1.	LIGHT LINES INDICATE EXISTING PIPING, DUCTWORK, EQUIPMENT, AND THE REMOVAL OF EXISTING PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE INSTALLED BY THIS CONTRACTOR UNLESS NOTED OTHERWISE.
2.	DEMOLITION SHALL INCLUDE ALL HANGERS, FITTINGS, DAMPERS, VALVES, ETC.	2.	BREAK CONNECTIONS REQUIRED AT ALL MAJOR EQUIPMENT FOR PIPING ITEMS THAT REQUIRE REMOVAL FOR MAINTENANCE.	2.	NEW WORK HAS BEEN SHOWN DIAGRAMMATICALLY AND DUE TO THE LIMITED SCALE OF THESE DRAWINGS, THE PLACEMENT AND POSITION OF EXISTING PIPING, ETC. IS CONSIDERED SCHEMATIC IN NATURE; THEREFORE THE DRAWINGS MAY NOT SHOW ALL OFFSETS AND TRANSITIONS WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL PROVIDE COMPLETE FULLY FUNCTIONAL SYSTEMS.
3.	REPAIR ANY INSULATION DAMAGED DURING REMOVAL. REPAIR WORK TO BE SAME AS NEW.	3.	PIPE REDUCTIONS ON HORIZONTAL PIPING GOING FROM LARGER TO SMALLER SHALL BE MADE WITH ECCENTRIC REDUCERS. TOP FLAT FOR LIQUID SYSTEMS, CONCENTRIC REDUCERS MAY BE USED FOR FLOW GOING FROM SMALL TO LARGER SIZE PIPE.	3.	COORDINATE ROUGH-IN AND FINAL LOCATION OF DUCTWORK AND PIPING WITH LIGHTING, STRUCTURE, SPRINKLERS, ETC. PROVIDE OFFSETS AND/OR EASEMENTS, OR RELOCATE AS REQUIRED AVOIDING CONFLICTS WITH WORK OF OTHER TRADES.
4.	COORDINATE WALL AND FLOOR PATCHING REQUIREMENTS WITH THE GENERAL CONTRACTOR. PATCHWORK SHALL MATCH MATERIALS, FINISH AND TEXTURE OF ADJACENT SURFACES. REFERENCE ARCHITECTURAL PLANS.	4.	FIRE SAFE ALL PIPE PENETRATIONS PER UL AT RATED WALLS.	4.	INSTALL MANUAL VOLUME DAMPERS IN ALL SUPPLY, RETURN AND EXHAUST DUCT SYSTEMS AS REQUIRED FOR CONTROLLING AIR OUTLETS TO TRUNK DUCTS, BRANCH DUCTS, OUTLETS, AND INLETS. CONTRACTOR SHALL INSTALL A COMPLETE SYSTEM OF DAMPERS AS REQUIRED FOR BALANCING AIR SYSTEMS.
5.	CONTRACTOR SHALL PATCH/REPAIR ALL UNUSED OPENINGS AND MODIFIED FINISH SURFACES. PATCH SHALL MATCH MATERIALS, FINISH AND TEXTURE OF ADJACENT SURFACES.	5.	NEW FLOORWALL/CEILING PENETRATIONS REQUIRED FOR MECHANICAL PIPING INSTALLATION SHALL BE CLEANLY BORED AT RIGHT ANGLES. AS NEW PIPING IS INSTALLED, NEW PIPING PENETRATIONS SHALL BE NEARLY SEALED TO FILL VOID. WALL PENETRATIONS SHALL BE FINISHED WITH ESCUTCHEONS.	5.	PLACE DIFFUSERS AS CLOSE TO PLAN LOCATION AS POSSIBLE WITHOUT INTERFERING WITH LIGHT GRID.
6.	OWNER SHALL RETAIN FIRST SALVAGE RIGHTS TO ALL REMOVED EQUIPMENT AND MATERIALS. UNLESS NOTED OTHERWISE, CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER AND TIMELY DISPOSAL OF ALL CONSTRUCTION DEBRIS INCLUDING BUT NOT LIMITED TO EQUIPMENT AND MATERIALS NOT CLAIMED BY OWNER TO AN EPA APPROVED, ENVIRONMENTALLY RESPONSIBLE, RECYCLE FACILITY OR LANDFILL.	6.	ALL NEW PIPING EXPOSED IN OCCUPIED SPACES SHALL HAVE PVC JACKETS INSTALLED OVER THE PIPING INSULATION. A PIPING REQUIRED TO BE EXPOSED SHALL BE INSTALLED VERTICALLY OR HORIZONTALLY TO A SINGLE LOCATION.	6.	ALL EXPOSED DUCTWORK SHALL BE DOUBLE WALL INSULATED DUCT AND PAINTED. CONFIRM COLOR PRIOR TO PAINTING.
7.	IT IS ESSENTIAL TO MINIMIZE DISRUPTIONS. COORDINATE ALL DEMOLITION WITH OWNER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER BEFORE SHUTTING DOWN ANY UTILITY OR SIMILAR SYSTEM. SHUTDOWNS FOR UTILITIES OR SIMILAR SYSTEMS SHALL BE REQUESTED WELL IN ADVANCE AND PRE-APPROVED BY THE PROPER AUTHORITY(S) HAVING JURISDICTION BEFORE BEGINNING WORK.	7.	ALL NEW EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED SO AS TO BE EASILY ACCESSIBLE.	7.	THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR. COORDINATE LOCATION WITH OTHER WALL MOUNTED DEVICES.
8.	ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.	8.	CONTRACTOR SHALL PATCH/REPAIR ALL UNUSED OPENINGS AND MODIFIED FINISH SURFACES. PATCH SHALL MATCH MATERIALS, FINISH AND TEXTURE OF ADJACENT SURFACES.	8.	PROVIDE CONCEALING FLANGES AT ALL VISIBLE DUCT PENETRATIONS THROUGH WALLS.
9.	THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.	9.	ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.	9.	ENSURE ALL MANUFACTURER RECOMMENDED CLEARANCES ARE MET FOR ALL EQUIPMENT.
10.	CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GC OR CONSTRUCTION MANAGER.	10.	THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.	10.	PROVIDE REQUIRED NEC CLEARANCE FOR ALL CONTROL PIPES INCLUDING VAV BOX COMPONENTS, BOXES LOCATED ABOVE CEILINGS.
		11.	CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.	11.	DO NOT ROUTE ANY COMPONENTS ABOVE ELECTRICAL EQUIPMENT. MAINTAIN ALL CODE REQUIRED CLEARANCES.
		12.	MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC REQUIRED CLEARANCES.	12.	ALL FLOOR MOUNTED MECHANICAL EQUIPMENT SHALL BE MOUNTED ON MINIMUM 4" CONCRETE HOUSEKEEPING PADS.
		13.	EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.	13.	PREP ALL EXPOSED METAL DUCTWORK TO RECEIVE PAINT.
		14.	ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.	14.	ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
		15.	THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.	15.	THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
		16.	CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.	16.	CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.
		17.	MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC REQUIRED CLEARANCES.	17.	MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC REQUIRED CLEARANCES.
		18.	EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.	18.	EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.

**SHIVEHATTERY**  
ARCHITECTURE + ENGINEERING

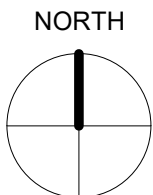
222 THIRD AVENUE SE, SUITE 300  
CEDAR RAPIDS, IA 52401  
319.384.0227 | SHIVE-HATTERY.COM

**BUTLER COUNTY PUBLIC  
HEALTH ADDITION**

DRAWN BY	IMV
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	06/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	



Autodesk Docs\2112202403\Butler Co Public Health\2112202403\MEP\2024.dwg  
08/15/2024 7:28:44 AM  
Autodesk Revit 2021



**A6** FIRST FLOOR MECHANICAL PIPING DEMOLITION PLAN

1/4" = 1'-0" 0 6'

KEYNOTES	
KEY	NOTE
MD02	DEMOLISH NATURAL GAS PIPING BACK TO BELOW GRADE AND CAP. SALVAGE METER AND RETURN TO OWNER/UTILITY.
MD03	DEMOLISH EXISTING ROOFTOP UNIT LOCATED ON THE ROOF OF THE EXISTING BUILDING. PATCH ROOF AS REQUIRED. SEE NEW WORK PLAN.
MD04	DEMOLISH ALL NATURAL GAS PIPING LOCATED ON THE ROOF. CONTRACTOR TO VERIFY EXISTING NATURAL GAS PIPING ROUTING TO THE EXISTING GAS FIRED UNIT HEATER. REROUTE NATURAL GAS PIPING TO EXISTING GAS FIRED UNIT HEATER TO CONNECT INTO NEW NATURAL GAS PIPING. SEE NEW WORK PLAN.



FIRST FLOOR  
MECHANICAL  
PIPING  
DEMOLITION  
PLAN

DRAWN BY	Author
APPROVED BY	Approver
ISSUED FOR	BID
ISSUE DATE	08/15/2024
PROJECT NUMBER	2112202420
FIELD BOOK	

BUTLER COUNTY PUBLIC  
HEALTH ADDITION

610 Oak Street, Allison, IA 50602

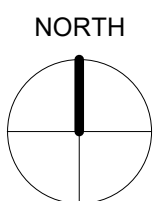
SHIVE-HATTERY  
ARCHITECTURE + ENGINEERING

222 THIRD AVENUE SE, SUITE 300  
CEDAR RAPIDS, IA 52401  
319.364.0227 | SHIVE-HATTERY.COM

MD101



Autodesk Docs\2112202420\Butler Co Public Health\2112202420\MEP\2021.rvt  
08/15/2022 7:26:44 AM  
Autodesk Revit 2021



**A6 FIRST FLOOR MECHANICAL HVAC DEMOLITION PLAN**  
1/4" = 1'-0" 0 6'



KEYNOTES	
KEY	NOTE
MD01	DEMOLISH EXISTING ROOFTOP UNIT AND VERTICAL SUPPLY DUCTWORK RUN DOWN TO PLYWOOD FLOOR, INCLUDING ELBOW. ALSO DEMOLISH VERTICAL RETURN PLENUM. PREPARE SUPPLY DUCT MAIN FOR CONNECTION TO NEW FURNACE. SEE NEW WORK PLAN.
MD05	EXISTING RETURN AIR FLEX DUCT ROUTED INTO BACK OF PLENUM BOX TO BE DEMOLISHED. EXISTING PLENUM BOX TO BE EXTENDED BACK TO ALLOW FOR A NEW DUCTWORK CONNECTION TO THE TOP OF THE PLENUM. SEE NEW WORK PLAN FOR CONNECTION.

**BUTLER COUNTY PUBLIC  
HEALTH ADDITION**

610 Oak Street, Allison, IA 50602

DRAWN BY	IMV
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	

**FIRST FLOOR  
MECHANICAL  
HVAC  
DEMOLITION  
PLAN**

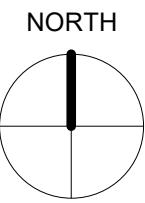
**MD201**

**SHIVE-HATTERY**  
ARCHITECTURE+ENGINEERING

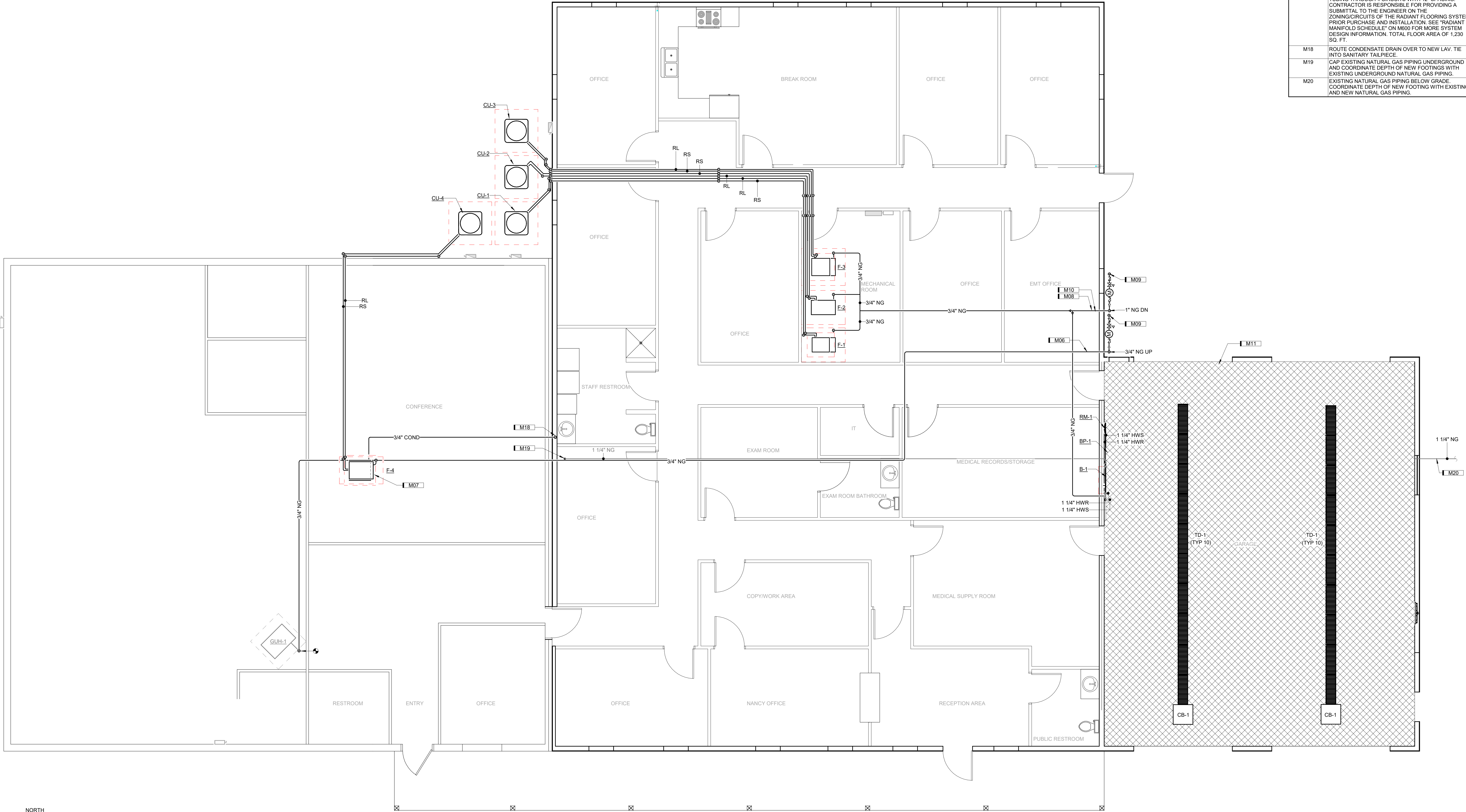
222 THIRD AVENUE SE, SUITE 300  
CEDAR RAPIDS, IA 52401  
515.364.0227 | SHIVEHATTERY.COM



Autodesk Docs\2112202403 Butler Co Public Health\2112202403 MEP\2024.dwg  
08/15/2024 7:28:38 AM  
Autodesk Revit 2021



**A6** FIRST FLOOR MECHANICAL PIPING PLAN

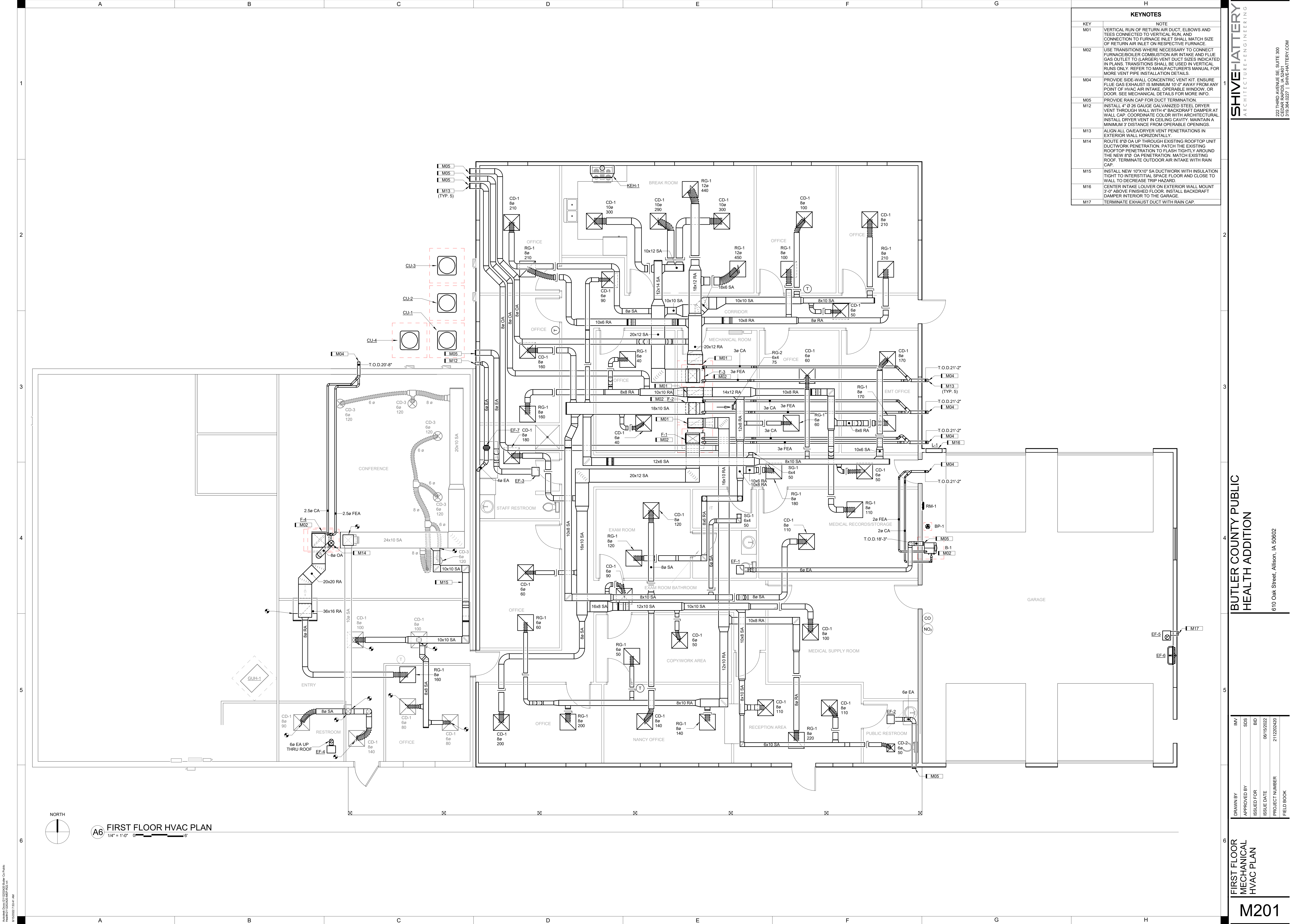


**KEYNOTES**

KEY	NOTE
M06	NATURAL GAS LINE FOR EXISTING BUILDING. GAS MAIN SIZED BASED ON A HEATING CAPACITY OF 88MBH, AN EQUIVALENT LENGTH OF 160FT, AN INCOMING PRESSURE OF LESS THAN 2PSI, AND A PRESSURE DROP OF 3.0 IN. W.C.
M07	FURNACE LOCATED ON MEZZANINE ABOVE CONFERENCE ROOM. ROUTE 3/4" NG PIPING THROUGH FIRST FLOOR CEILING PLENUM AND PENETRATE UP THROUGH THE MEZZANINE FLOOR TO TIE INTO THE NEW FURNACE. ROUTE REFRIGERANT LINE SET HIGH, TIGHT TO STRUCTURE IN MEZZANINE TO AVOID TRIPPING HAZARD.
M08	ROUTE NATURAL GAS IN FIRST FLOOR CEILING PLENUM.
M09	TIE NATURAL GAS PIPE INTO EXISTING NATURAL GAS LINE BELOW GRADE.
M10	NATURAL GAS LINE FOR NEW BUILDING. GAS MAIN SIZED BASED ON A HEATING CAPACITY OF 284MBH, AN EQUIVALENT LENGTH OF 108FT, AN INCOMING PRESSURE OF LESS THAN 2PSI, AND A PRESSURE DROP OF 3.0 IN. W.C.
M11	RADIANT FLOORING TO BE INSTALLED UNDER GARAGE FLOOR PER MANUFACTURERS INSTRUCTIONS. INSTALL TO AVOID NEW TRENCH DRAINS AND CATCH BASINS. RADIANT FLOORING TO PROVIDE A HEATING LOAD 34 BTU/HR/SQ.FT. INSTALL TO BE COMPLETED USING 5/8" TUBING THROUGH 4 CIRCUITS WITH 12" SPACING. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SUBMITTAL TO THE ENGINEER ON THE ZONING/CIRCUITS OF THE RADIANT FLOORING SYSTEM PRIOR PURCHASE AND INSTALLATION. SEE "RADIANT MANIFOLD SCHEDULE" ON M600 FOR MORE SYSTEM DESIGN INFORMATION. TOTAL FLOOR AREA OF 1,230 SQ. FT.
M18	ROUTE CONDENSATE DRAIN OVER TO NEW LAV. TIE INTO SANITARY TAILPIECE.
M19	CAP EXISTING NATURAL GAS PIPING UNDERGROUND AND COORDINATE DEPTH OF NEW FOOTINGS WITH EXISTING UNDERGROUND NATURAL GAS PIPING.
M20	EXISTING NATURAL GAS PIPING BELOW GRADE. COORDINATE DEPTH OF NEW FOOTING WITH EXISTING AND NEW NATURAL GAS PIPING.

DRAWN BY	Author
APPROVED BY	Approver
ISSUED FOR	BID
ISSUE DATE	08/15/2024
PROJECT NUMBER	2112202420
FIELD BOOK	





KEYNOTES	
KEY	NOTE
M01	VERTICAL RUN OF RETURN AIR DUCT, ELBOWS AND TEES CONNECTED TO VERTICAL RUN, AND CONNECTION TO FURNACE INLET SHALL MATCH SIZE OF RETURN AIR INLET ON RESPECTIVE FURNACE.
M02	USE TRANSITIONS WHERE NECESSARY TO CONNECT FURNACE/BOILER COMBUSTION AIR INTAKE AND FLUE GAS OUTLET TO (LARGER) VENT DUCT SIZES INDICATED IN PLANS. TRANSITIONS SHALL BE USED IN VERTICAL RUNS ONLY. REFER TO MANUFACTURER'S MANUAL FOR MORE VENT PIPE INSTALLATION DETAILS.
M04	PROVIDE SIDE-WALL CONCENTRIC VENT KIT. ENSURE FLUE GAS EXHAUST IS MINIMUM 10'-0" AWAY FROM ANY POINT OF HVAC AIR INTAKE, OPERABLE WINDOW, OR DOOR. SEE MECHANICAL DETAILS FOR MORE INFO.
M05	PROVIDE RAIN CAP FOR DUCT TERMINATION.
M12	INSTALL 4" Ø 26 GAUGE GALVANIZED STEEL DRYER VENT THROUGH WALL WITH 4" BACKDRAFT DAMPER AT WALL CAP. COORDINATE COLOR WITH ARCHITECTURAL. INSTALL DRYER VENT IN CEILING CAVITY. MAINTAIN A MINIMUM 3' DISTANCE FROM OPERABLE OPENINGS.
M13	ALIGN ALL OA/EA DRYER VENT PENETRATIONS IN EXTERIOR WALL HORIZONTALLY.
M14	ROUTE 8"Ø OA UP THROUGH EXISTING ROOFTOP UNIT DUCTWORK PENETRATION. PATCH THE EXISTING ROOFTOP PENETRATION TO FLASH TIGHTLY AROUND THE NEW 8"Ø OA PENETRATION. MATCH EXISTING ROOF. TERMINATE OUTDOOR AIR INTAKE WITH RAIN CAP.
M15	INSTALL NEW 10"X10" SA DUCTWORK WITH INSULATION TIGHT TO INTERSTITIAL SPACE FLOOR AND CLOSE TO WALL TO DECREASE TRIP HAZARD.
M16	CENTER INTAKE LOUVER ON EXTERIOR WALL MOUNT 3'-0" ABOVE FINISHED FLOOR. INSTALL BACKDRAFT DAMPER INTERIOR TO THE GARAGE.
M17	TERMINATE EXHAUST DUCT WITH RAIN CAP.

BUTLER COUNTY PUBLIC  
HEALTH ADDITION

610 Oak Street, Allison, IA 50602

DRAWN BY	IMV
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	

FIRST FLOOR  
MECHANICAL  
HVAC PLAN

M201

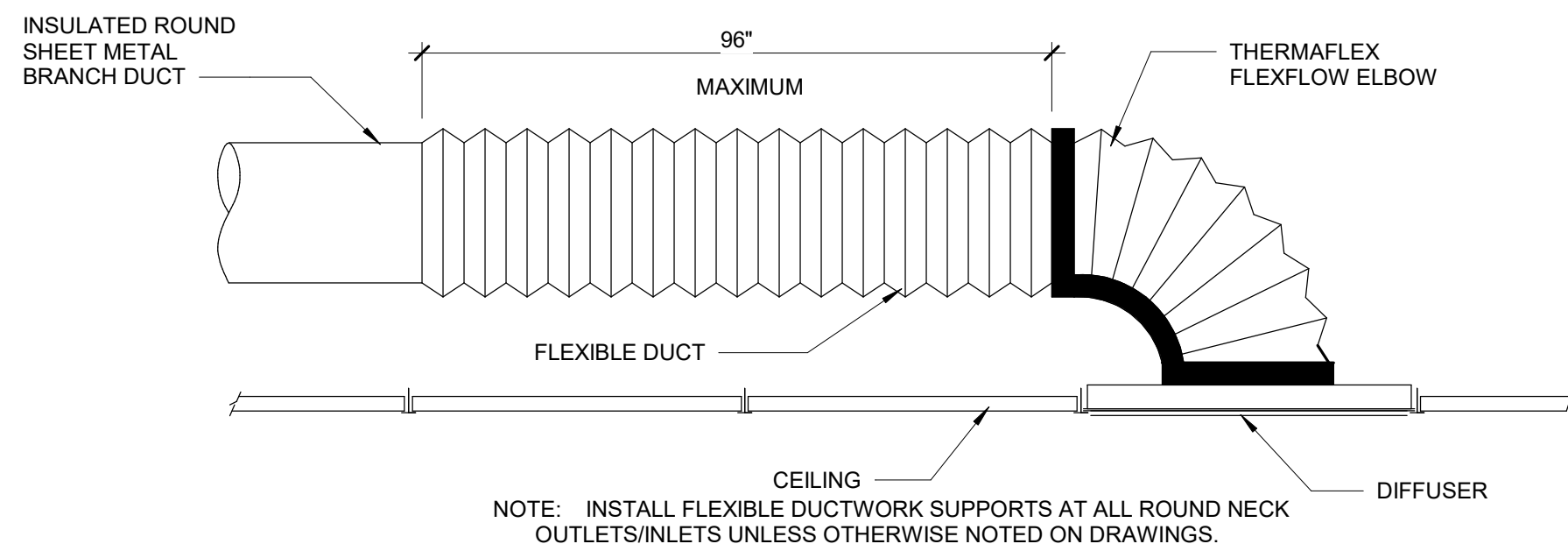
SHIVE-HATTERY  
ARCHITECTURE+ENGINEERING

222 THIRD AVENUE SE, SUITE 300  
CEDAR RAPIDS, IA 52401  
515.364.0227 | SHIVE-HATTERY.COM

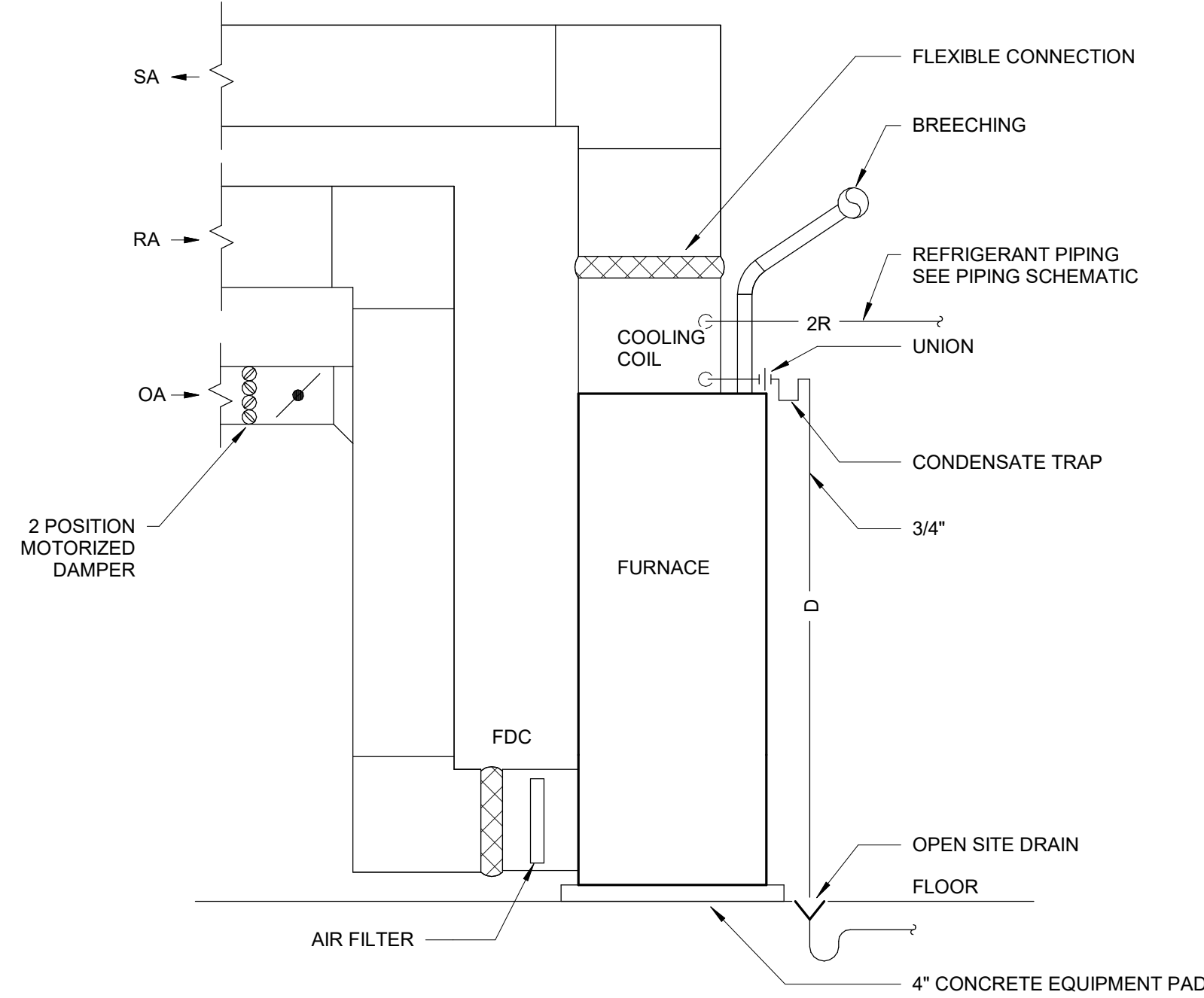


Autodesk Docs\1712202403\Butler Co Public Health\1712202403\MEP\022.dwg  
08/15/2022 7:54:42 AM  
Autodesk Revit 2021

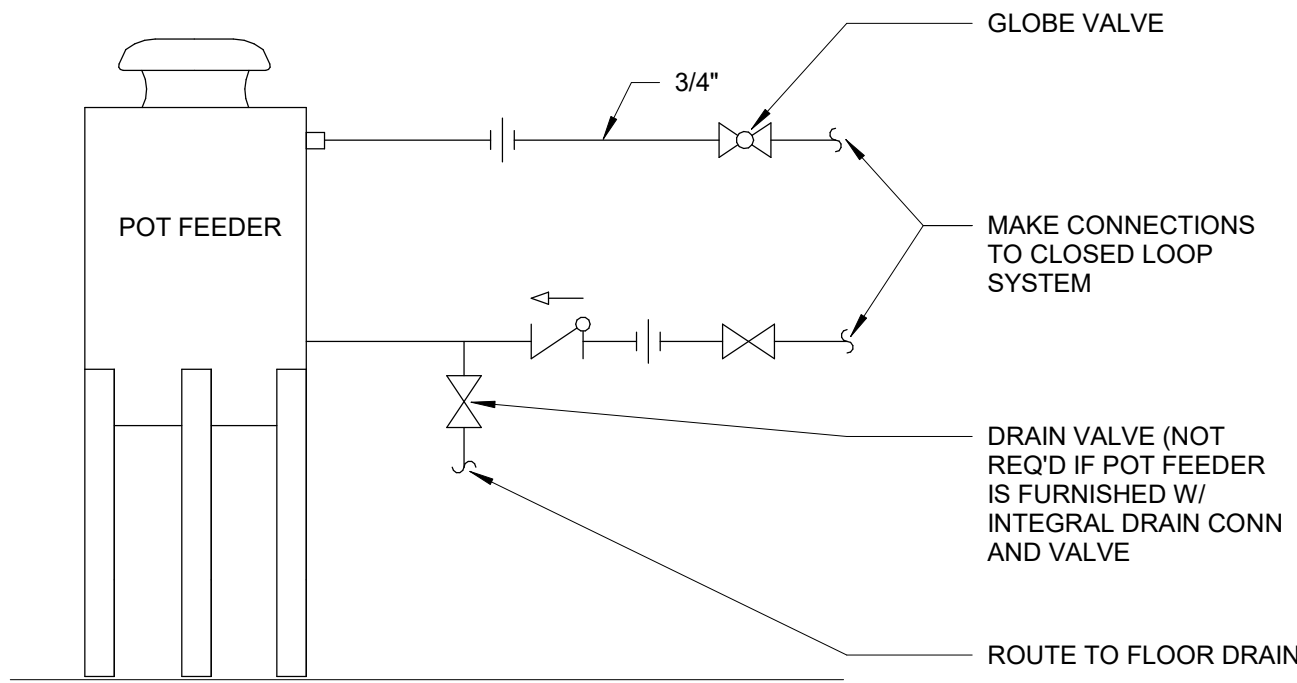
**B4** DIFFUSER CONNECTION DETAIL



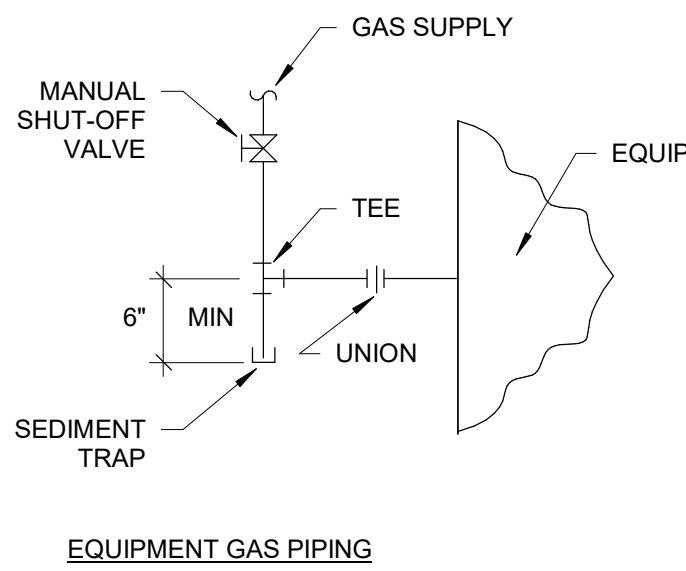
**B6** TYPICAL UPLFLOW FURNACE INSTALLATION SCHEMATIC



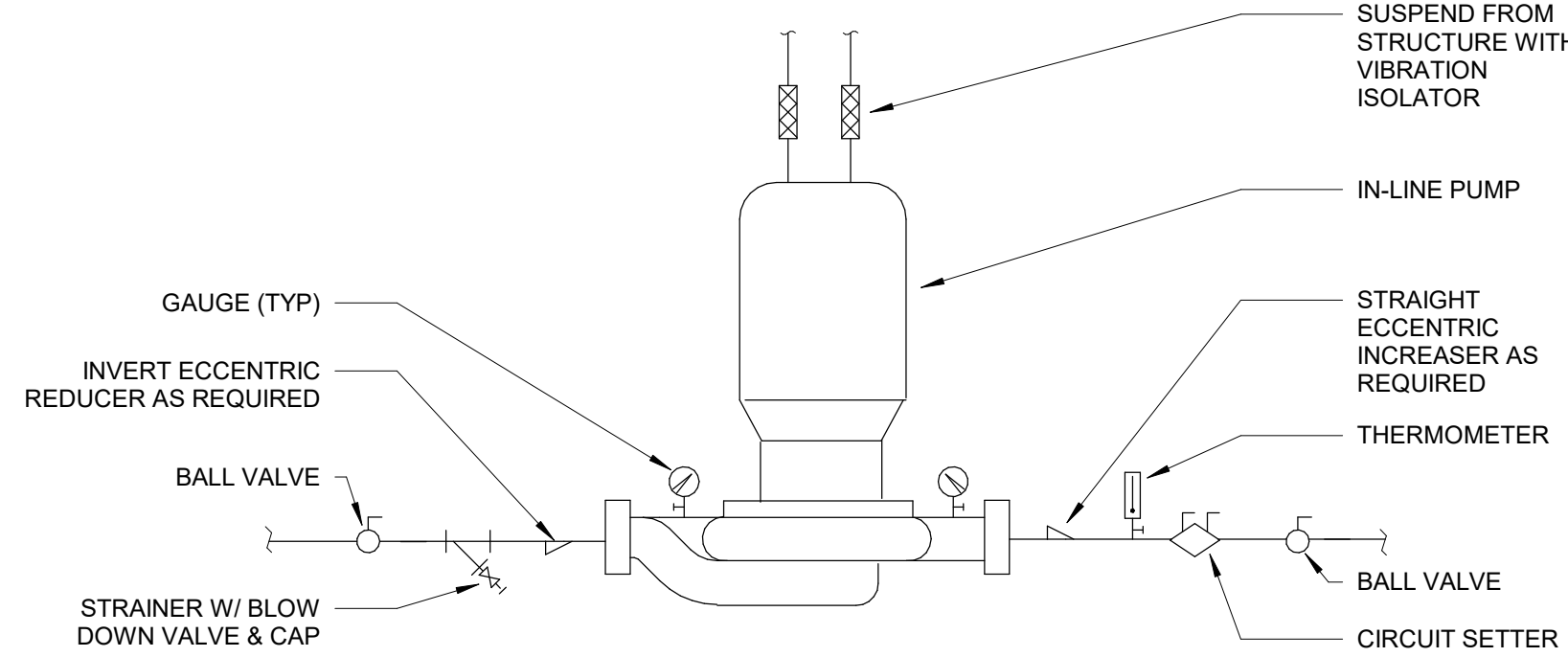
**D2** POT FEEDER PIPING DETAIL



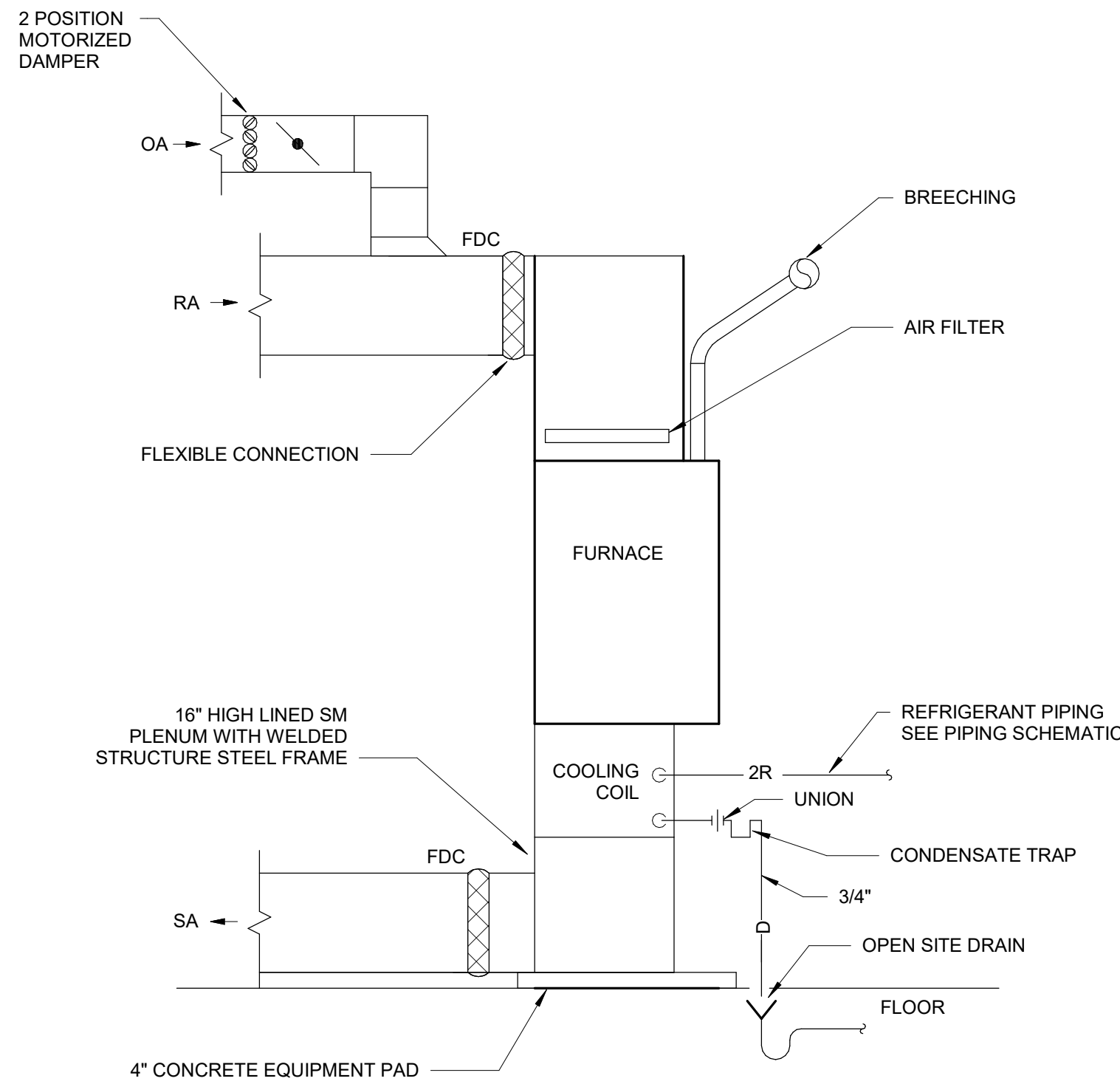
**D3** EQUIPMENT GAS PIPING CONNECTION



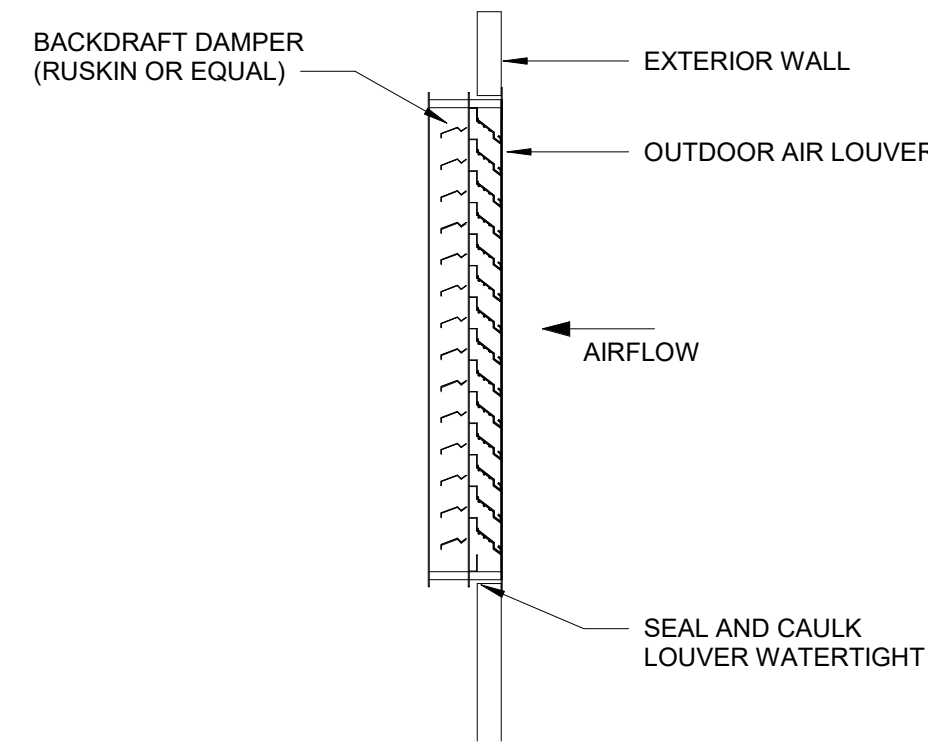
**D4** PIPING DIAGRAM - IN-LINE PUMP



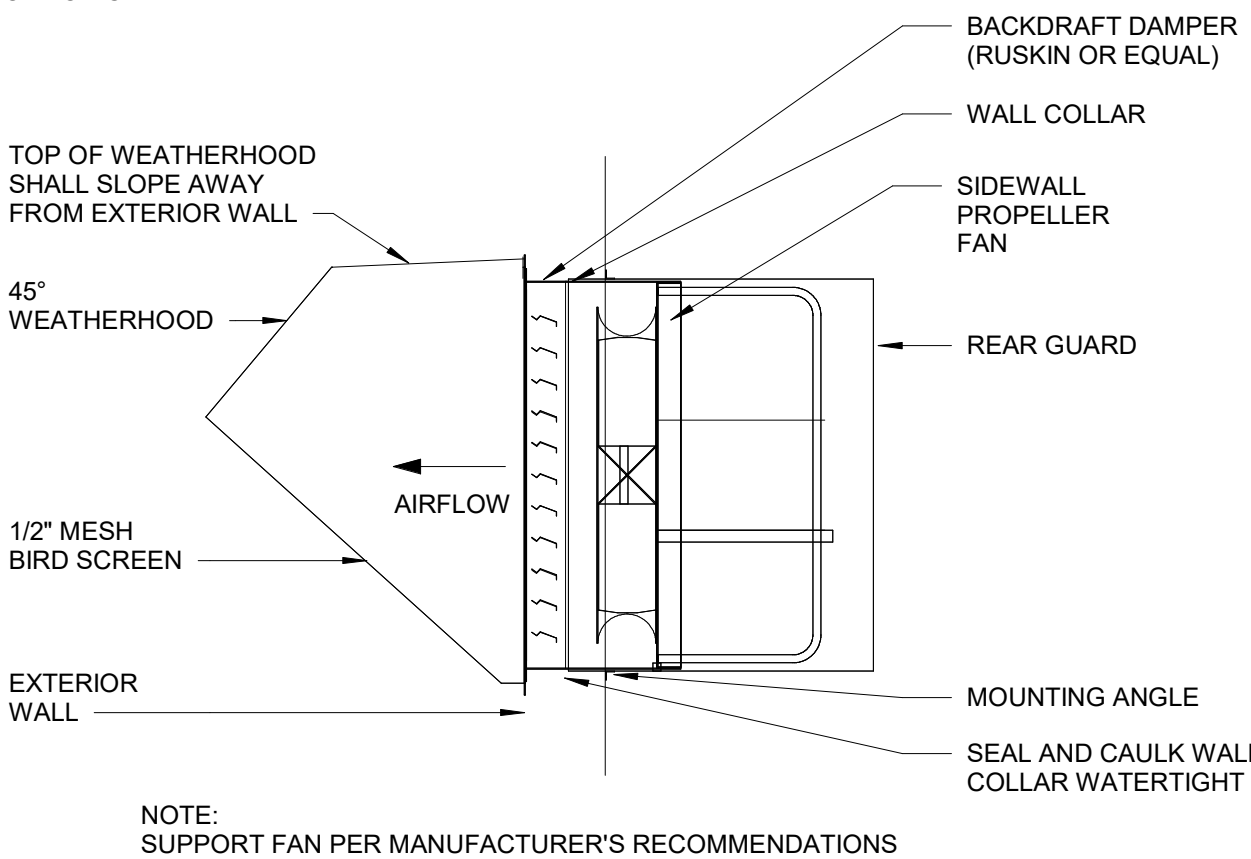
**D6** TYPICAL DOWNFLOW FURNACE INSTALLATION SCHEMATIC



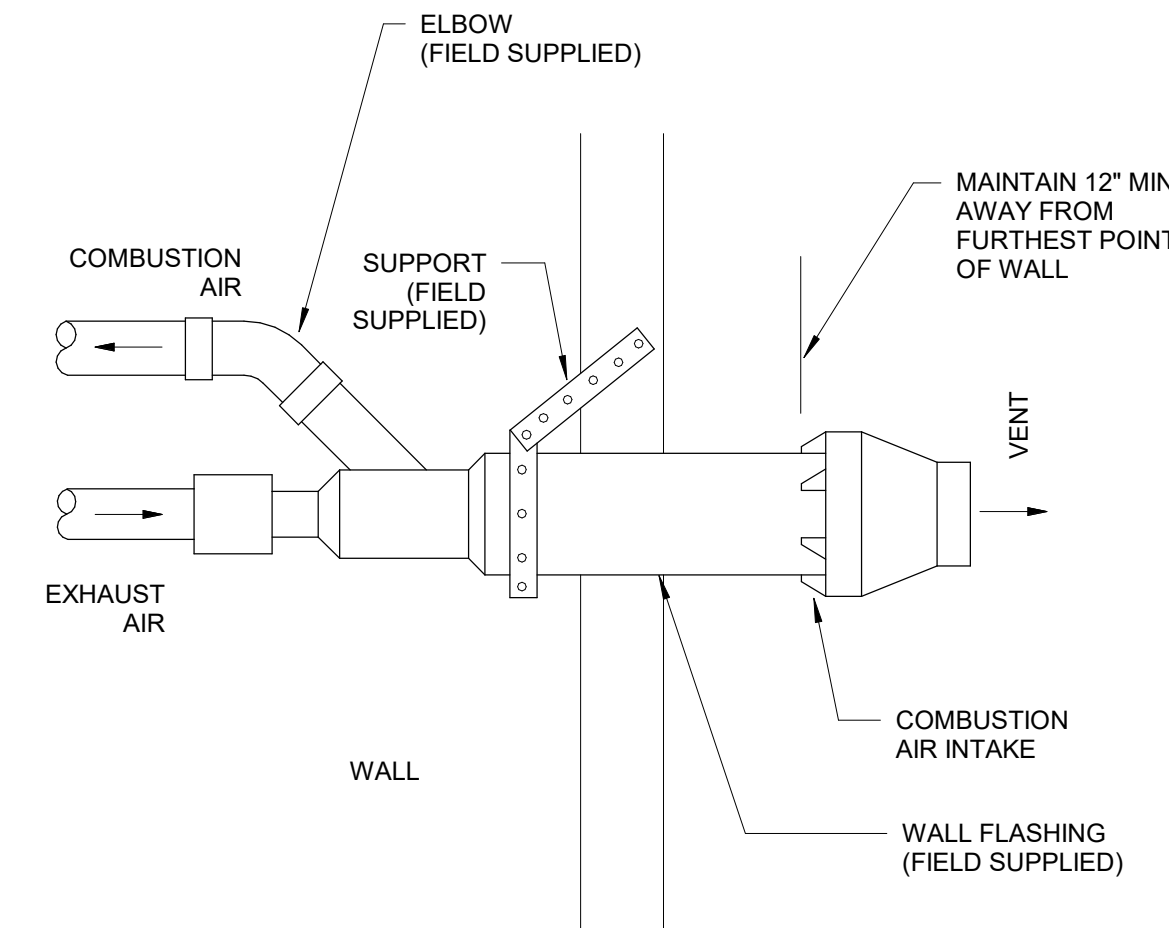
**G2** INTAKE LOUVER



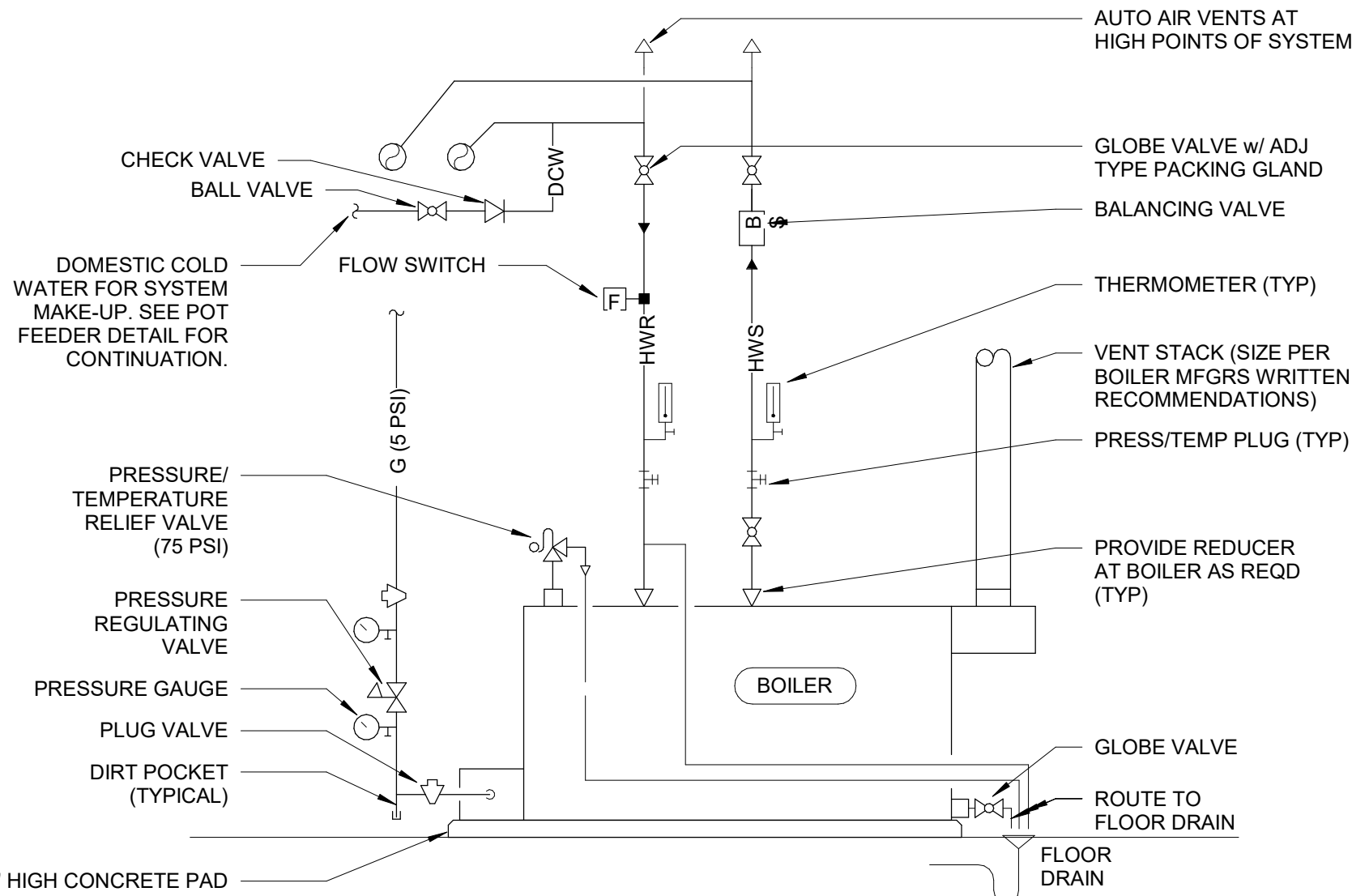
**G3** SIDEWALL PROPELLER EXHAUST FAN



**G4** SIDE-WALL CONCENTRIC VENT



**F6** GAS-FIRED BOILER PIPING DETAIL



DRAWN BY	INV
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	



RADIANT MANIFOLD SCHEDULE										
REMARKS: 1. INDOOR INSTALLATION. 2. CONTRACTOR TO MOUNT PIPING MANIFOLD TO WALL AT 19-24" A.F.F. PER MANUFACTURERS RECOMMENDATIONS.										
MARK	SYSTEM SERVED	MATERIAL	SYSTEM FLUID	FLOW (GPM)	CV	NUMBER OF IN-FLOOR CIRCUITS	TOTAL LENGTH OF EACH CIRCUIT	MAXIMUM WORKING PRESSURE @ 140°F (PSI)	DESIGN BASIS	REMARKS
RM-1	GARAGE IN-FLOOR HEATING	ENGINEERED POLYMER	WATER	4.17	1.4	4	297	87	UPONOR A2870401	1, 2

KITCHEN EXHAUST HOOD SCHEDULE										
REMARKS: 1. MOUNT KITCHEN EXHAUST HOOD PER MANUFACTURERS INSTALLATION GUIDELINES AND IN A MANNER THAT MEETS ALL APPLICABLE CODES AND GUIDELINES. 2. HOOD TO EXHAUST OUT THE SIDE OF THE BUILDING. TERMINATE WITH INSECT SCREEN AND WEATHERHOOD.										
MARK	SYSTEM SERVED	AIRFLOW (CFM)	VELOCITY (FPM)	HOOD LENGTH	HOOD WIDTH	EXHAUST DIAMETER	MAX PD (IN)	DESIGN BASIS	REMARKS	
KEH-1	KITCHEN STOVE	180	917	3'-0"	1'-0"	8"	0.2	GREENHECK GRRS	1, 2	

LOUVER SCHEDULE										
REMARKS: 1. INSTALL WITH EXPANDED, FLATTENED ALUMINUM BIRD SCREEN IN REMOVABLE FRAME. 2. INSTALL INTAKE LOUVER WITH GRAVITY BACKDRAFT DAMPER.										
MARK	AREA SERVED	AIR FLOW (CFM)	DIMENSIONS			MAX FREE AREA (%)	FREE AREA VELOCITY (FPM)	PRESSURE DROP (WG)	DESIGN BASIS	REMARKS
L-1	GARAGE	900	H	W	D	57	650	0.07	RUSKIN ELF6375DX	1, 2

DIFFUSERS REGISTERS AND GRILLES SCHEDULE							
REMARKS: 1. CONTRACTOR TO COORDINATE FINAL DIFFUSER LOCATIONS WITH LIGHTING AND CEILING GRID. 2. PROVIDE WITH OBD FOR AIRFLOW CONTROL.							
MARK	MATERIAL	DESCRIPTION	FACE SIZE	FACTORY FINISH	DESIGN BASIS	REMARKS	
CD-1	ALUMINUM	LAY-IN	24"x24"	WHITE	TITUS TMS	1	
CD-2	ALUMINUM	LAY-IN	12"x12"	WHITE	TITUS TMS	1	
RG-1	ALUMINUM	LAY-IN	24"x24"	WHITE	TITUS PAR	1	
RG-2	ALUMINUM	SIDEWALL RETURN	SEE PLANS	WHITE	TITUS 350	2	
SG-1	ALUMINUM	SIDEWALL GRILLE	SEE PLANS	WHITE	TITUS 300FL	2	

FURNACE SCHEDULE - GAS																									
REMARKS: 1. INSTALL PER MANUFACTURERS RECOMMENDATIONS. ENSURE CLEARANCE REQUIREMENTS ARE MET DURING INSTALL. 2. FURNACE HAS AN MDOF OF 15 AMPS. 3. ROUTE CONDENSATE DRAIN ALONG WALL TO AVOID TRIPPING HAZARD AND TERMINATE WITH AN AIR GAP TO THE FLOOR SINK LOCATED IN THE MECHANICAL ROOM. 4. COMBUSTION AIR AND EXHAUST AIR FLUES TO BE ROUTED UP THROUGH EAST WALL AND TERMINATED WITH CONCENTRIC VENT KIT.																									
MARK	AREA SERVED	OA CFM	CFM	ESP (IN WC)	AIRFLOW DIRECTION	COOLING COIL DATA					HEATING DATA					UNIT ELECTRICAL DATA					DESIGN BASIS	REMARKS			
						TOTAL MBH	EAT (°F)		LAT (°F)		MODEL	EAT (°F)	LAT (°F)	INPUT MBH	THERMAL EFFICIENCY	MINIMUM GAS PRESSURE (IN.W.C.)	HP	VOLTS	PHASE	CONTROL OR STARTER			CONTROLLER OR STARTER FURNISHED / INSTALLED	DISCONNECT FURNISHED / INSTALLED	
							DB	WB	DB	WB															
F-1	NEW BUILDING - SOUTH	180	1000	0.5	TOP DISCHARGE	40	80	67	51	51	CX35-48B-F	54	89	66	96	5	1/2	120	1	THERMOSTAT	DIV 23 / DIV 23	DIV 26 / DIV 26	LENNOX EL296UH070-XV36B	1, 2, 3, 4	
F-2	NEW BUILDING - CENTRAL	230	990	0.5	TOP DISCHARGE	36	80	67	52.5	52.5	CX35-36B-F	42	93	60	97.5	5	1/2	120	1	THERMOSTAT	DIV 23 / DIV 23	DIV 26 / DIV 26	LENNOX SL297UH060-NV36B	1, 2, 3, 4	
F-3	NEW BUILDING - NORTH	200	1460	0.5	TOP DISCHARGE	47.5	80	67	56	56	CX35-49C-F	55	93	80	97.5	5	3/4	120	1	THERMOSTAT	DIV 23 / DIV 23	DIV 26 / DIV 26	LENNOX SL297UH080-NV48C	1, 2, 3, 4	
F-4	EXISTING BUILDING	200	1200	0.5	BOTTOM DISCHARGE	41	80	67	55	55	CR33-50/60C	50	99	88	96	5	3/4	120	1	THERMOSTAT	DIV 23 / DIV 23	DIV 26 / DIV 26	LENNOX EL296DF090-XE48C	1, 2, 4	

AIR COOLED CONDENSING UNIT SCHEDULE																	
REMARKS: 1. PROVIDE WITH HAIL GUARDS. 2. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSIONS WITH INSTALLATION DOCUMENTATION PRIOR TO INSTALLATION.																	
MARK	LOCATION	SYSTEM SERVED	CAPACITY (MBH)	COND AMBIENT AIR TEMP (°F)	MINIMUM OPERATING AMBIENT TEMPERATURE	NUMBER OF COMPRESSORS	SEER	ELECTRICAL DATA						OPERATING WEIGHT	REFRIGERANT TYPE	DESIGN BASIS	REMARKS
								VOLTS	PHASE	MCA	CONTROL OR STARTER	STARTER FURNISHED / INSTALLED	DISCONNECT FURNISHED / INSTALLED				
CU-1	YARD	F-1	40	95	40	1	15.1	230	1	23	THERMOSTAT	DIV 23 / DIV 23	DIV 26 / DIV 26	211	R-410A	LENNOX ML14XC-15042-230	1, 2
CU-2	YARD	F-2	36	95	40	1	15.5	230	1	21	THERMOSTAT	DIV 23 / DIV 23	DIV 26 / DIV 26	190	R-410A	LENNOX 16ACX-036-230	1, 2
CU-3	YARD	F-3	47.5	95	40	1	15.5	230	1	29	THERMOSTAT	DIV 23 / DIV 23	DIV 26 / DIV 26	235	R-410A	LENNOX 16ACX-048-230	1, 2
CU-4	YARD	F-4	41	95	40	1	15.5	230	1	23	THERMOSTAT	DIV 23 / DIV 23	DIV 26 / DIV 26	211	R-410A	LENNOX ML14XC-15042-230	1, 2

- SEQUENCE OF CONTROL
- FURNACES SHALL BE CONTROLLED OFF OF LOCAL THERMOSTAT, WITH FANS RUNNING CONTINUOUSLY.
  - EXHAUST FANS SHALL RUN ACCORDINGLY.
    - EF-1, EF-2, EF-3, AND EF-4 SHALL BE CONTROLLED FROM ROOM LIGHT SWITCH.
    - EF-5 SHALL RUN CONTINUOUSLY.
    - EF-6 SHALL BE CONTROLLED BY THE CO DETECTION SYSTEM. UPON NOTIFICATION OF ELEVATED LEVELS OF CO OR NO2, EF-3 SHALL RUN UNTIL CO AND/OR NO2 DETECTION SYSTEM NO LONGER DETECTS ELEVATED LEVELS OF CO/NO2, AT WHICH TIME THE EXHAUST FAN SHALL TURN OFF.
    - EF-7, PRE-INSTALLED PRESSURE SWITCH TO PROVIDE FEEDBACK CONTROL FOR THE FAN TO RUN ONLY WHEN IT SENSES THE DRYER IS ON.
  - RADIANT MANIFOLD SHALL BE CONTROLLED BY SPACE TEMPERATURE IN GARAGE.
  - BOILER PUMP BP-1 SHALL RUN CONTINUOUSLY WHEN OUTSIDE AIR TEMPERATURE IS BELOW 50°F.
  - KITCHEN EXHAUST FAN SHALL RUN WHEN COMMANDED ON BY LOCAL SWITCH.
  - BOILER TO BE CONTROLLED BY RETURNING WATER TEMPERATURE TO MAINTAIN A 20°F SPLIT.

DRAWN BY	IMV
APPROVED BY	SDS
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	



ELECTRICAL SYMBOL LEGEND		
HT AFF	SYMBOL	DESCRIPTION
		SURFACE LIGHT (TYPE DENOTED)
		RECESSED LIGHT (TYPE DENOTED)
PER SCHED		WALL MOUNTED LIGHT (TYPE DENOTED)
PER SCHED		WALL MOUNTED FLOOD LIGHT (TYPE DENOTED)
PER SCHED		POLE MOUNTED LIGHT (TYPE DENOTED)
		SURFACE LIGHT (TYPE DENOTED)
		SUSPENDED OR PENDANT LIGHT (TYPE DENOTED)
		RECESSED LIGHT (TYPE DENOTED)
		FLUORESCENT STRIP LIGHT (TYPE DENOTED)
AS NOTED		TRACK AND TRACK LIGHT (TYPE DENOTED)
96"		EMERGENCY BATTER LIGHT (TYPE DENOTED)
		EXIT SIGN (TYPE DENOTED)
AS NOTED		LIGHT FIXTURE ON EMERGENCY CIRCUIT
48"		SINGLE POLE SWITCH
48"		3-WAY SWITCH
48"		4-WAY SWITCH
48"		KEYED SWITCH
48"		DIMMER SWITCH
48"		OCCUPANCY SENSOR SWITCH
48"		MOMENTARY CONTACT SWITCH
48"		TIMER SWITCH
48"		FAN SPEED CONTROL
48"		MOTOR HORSEPOWER RATED SWITCH
48"		PUSH BUTTON
48"		DURESS PUSH BUTTON, UNDER COUNTER
18" UNO		DUPLEX RECEPTACLE (TYPE DENOTED)
		GF = GROUND FAULT CIRCUIT INTERRUPTER
		WP = IN-USE WEATHERPROOF COVER
		EWI = ELECTRIC WATER HEATER
		AC = ABOVE COUNTER
		GD = GARBAGE DISPOSAL
		REF = REFRIGERATOR
		VEND = VENDING MACHINE
		USB = USB DUAL TYPE A
		EM = EMERGENCY
		IG = ISOLATED GROUND
18" UNO		FOURPLEX RECEPTACLE
		IG = ISOLATED GROUND
		FLOOR BOX (TYPE DENOTED)
		CEILING MOUNTED DUPLEX RECEPTACLE

HT AFF	SYMBOL	DESCRIPTION
18"		SURFACE RACEWAY (TYPE DENOTED)
		CLOCK (TYPE DENOTED)
		POWER POLE (OPEN OFFICE STYLE)
		ELECTRICAL CONNECTION (SEE SCHEDULE)
		RECESSED WALL MTD ELECTRICAL CONNECTION
		HD = HAND DRYER
AS NOTED		JUNCTION BOX
72"		CIRCUIT BREAKER PANEL
72"		POWER OR DISTRIBUTION PANEL
72"		SPECIAL CABINET (TYPE DENOTED)
		TRANSFORMER (TYPE DENOTED)
		GENERATOR (KVA DENOTED)
		MOTOR (SEE SCHEDULE)
		MOTORIZED DAMPER
72"		SAFETY DISCONNECTION SWITCH
		ADJUSTABLE SPEED DRIVE
72"		RELAY
		OCCUPANCY SENSOR (TYPE DENOTED)
		LIGHT LEVEL SENSOR (TYPE DENOTED)
AS NOTED		PHOTOCCELL
AS NOTED		CCTV CAMERA (TYPE DENOTED)
		SURVEILLANCE MONITOR

HT AFF	SYMBOL	DESCRIPTION
		CONDUIT CONCEALED IN WALL OR OVERHEAD
		CONDUIT CONCEALED BELOW FLOOR
		CONDUIT TRANSITION UP
		CONDUIT TRANSITION DOWN
		CONDUIT STUBBED OUT
		BRANCH CIRCUIT HOME RUN
		CABLE TRAY (TYPE DENOTED)
		CONDUIT SLEEVE (SIZE DENOTED)
48"		WALL TELEPHONE OUTLET (TYPE DENOTED)
18" UNO		TELEPHONE OUTLET (TYPE DENOTED)
18" UNO		DATA OUTLET (INDICATED QTY CABLES)
18" UNO		VOICE/DATA OUTLET (TYPE DENOTED)
		WIRELESS ACCESS POINT
18" UNO		TELEVISION OUTLET
		CEILING MOUNTED TELEVISION OUTLET
84"		SPEAKER (WALL OR CEILING MOUNT)
84"		HORN TYPE SPEAKER
		SURFACE MOUNT SPEAKER SUSPENDED FROM CEILING
48"		VOLUME CONTROL
48"		INTERCOM STATION
		INTERCOM MASTER
		KEYED NOTE (SEE SCHEDULE)
		SPRINKLER FLOW SWITCH
		SPRINKLER VALVE TAMPER SWITCH
72"		FIRE ALARM CONTROL PANEL (SPRINKLER MONITOR)
		SMOKE DETECTOR (RESIDENTIAL STANDALONE)

ELECTRICAL GENERAL NOTES

- ALL WORK SHALL BE IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE - LATEST EDITION ADOPTED BY THE STATE, THE STATE AMENDMENTS, LOCAL MUNICIPAL CODES AND ORDINANCES, AND THE AUTHORITY HAVING JURISDICTION. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADAAG (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES).
- IT IS THE INTENT OF THESE DOCUMENTS TO COMPLY WITH THE APPLICABLE CODES. WHERE DISCREPANCIES OCCUR, NOTIFY THE ENGINEER/ARCHITECT IN WRITING FOR INTERPRETATION. CORRECT ANY INSTALLATION THAT FAILS TO COMPLY WITH THE CODES AND STANDARDS AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL PROVIDE ALL WORK NECESSARY INCLUDING ALL LABOR, MATERIALS, PERMITS, TAXES, FEES, INSPECTIONS, HARDWARE, AND COST FOR INSTALLATION FOR A COMPLETE AND OPERATIONAL SYSTEM.
- ALL MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, COMPLETE WITH MANUFACTURER'S GUARANTEE OR WARRANTY AND SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
- COORDINATE ELECTRICAL INSTALLATION WITH ALL TRADES PRIOR TO INSTALLATION. IF ELECTRICAL WORK INSTALLED INTERFERES WITH OTHER TRADES AFTER INSTALLATION, THE CONTRACTOR SHALL MAKE ALL NECESSARY CHANGES TO CORRECT THE CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- DEVICES, OUTLETS, AND JUNCTION BOXES SHOWN ON DRAWINGS ARE DIAGRAMMATIC. COORDINATE EXACT PLACEMENT OF ALL DEVICES WITH OWNER AND OTHER TRADES PRIOR TO INSTALLATION. VERIFY DOOR SWING PRIOR TO INSTALLATION OF ALL SWITCH BOXES. ADJUSTMENT OF LOCATION PRIOR TO INSTALLATION, SHALL BE DONE WITH NO ADDITIONAL COST TO THE OWNER.
- DRAWINGS ARE DIAGRAMMATIC. ALL DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION THIS CONTRACTOR SHALL ADJUST CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
- ALL ELECTRICAL PANELS WITH ANY BRANCH CIRCUIT LOAD REVISIONS (DEMOLITION OR NEW WORK) SHALL HAVE A NEW TYPED UPDATED CIRCUIT DIRECTORY CARD INSTALLED INSIDE THE DOOR OF THE ELECTRICAL PANEL. THE CONTRACTOR SHALL VERIFY THAT ALL UNUSED CIRCUIT BREAKERS ARE TURNED OFF AND PROPERLY INDICATED AS 'SPARE' ON THE NEW CIRCUIT DIRECTORY CARD. THE CONTRACTOR SHALL INSTALL FILLER PLATES WHERE BREAKERS ARE REMOVED AS PART OF THIS PROJECT OR HAVE BEEN REMOVED PREVIOUSLY.
- NO ENERGIZED CONDUCTORS SHALL BE EXPOSED AT ANYTIME EXCEPT WHEN THE IMMEDIATE AREA IS UNDER THE SUPERVISION OF A QUALIFIED ELECTRICIAN.
- WHERE CONDUIT IS SURFACE MOUNTED TO A WALL AND RUN VERTICALLY DOWN TO A SWITCH/OUTLET BOX, UTILIZE 1-HOLE OR 2-HOLE CONDUIT STRAPS.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF BUILDING EXPANSION JOINTS. ALL CONDUITS CROSSING EXPANSION JOINTS SHALL BE INSTALLED WITH EXPANSION FITTINGS. UNLESS THE CONDUIT IS BELOW SLAB IN THE COMPACTED GRANULAR FILL EXPANSION FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, AND MANUFACTURER'S WRITTEN RECOMMENDATIONS.
- HVAC CONTROL WIRING FURNISHED AND INSTALLED BY DIVISION 23. HVAC POWER AND CONTROL WIRING, CONDUIT AND RACEWAY SHALL BE INSTALLED PER DIVISION 26 SPECIFICATIONS.
- REFER TO APPROVED MECHANICAL EQUIPMENT SUBMITTAL DRAWINGS FOR EQUIPMENT RATINGS AND SIZES. COST OF CHANGES TO ELECTRICAL INSTALLATION RESULTING FROM SUBMISSION OF ALTERNATE EQUIPMENT FROM THAT SCHEDULED ON THE MECHANICAL DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR/VENDOR PROVIDING SUCH EQUIPMENT.
- TO REDUCE NOISE BETWEEN WALLS, CONTRACTOR SHALL AVOID INSTALLING POWER OR DATA OUTLETS LOCATED BACK TO BACK, WHERE OUTLETS ARE REQUIRED TO BE LOCATED BACK TO BACK, CONTRACTOR SHALL PROVIDE SOUND PROOFING MATERIAL BETWEEN DEVICE BOXES.
- PENETRATIONS THROUGH FIRE RATED WALLS BY DIVISION 26. CONTRACTOR SHALL BE SEALED WITH APPROPRIATE FIRE PROOFING MATERIAL TO RESTORE FIRE RATING. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS.
- THE CONTRACTOR SHALL KEEP THE WORK AREA CLEAN OF ALL DEBRIS ON A DAILY BASIS. ALL NEW MATERIALS AWAITING INSTALLATION SHALL BE KEPT IN AREAS DESIGNATED BY THE OWNER.
- THESE DRAWINGS SHALL NOT BE SCALED TO OBTAIN DIMENSIONS. REFER TO DIMENSIONED ARCHITECTURAL FLOOR PLANS. IF THE DIMENSIONS CANNOT BE DETERMINED BY THE INFORMATION GIVEN, CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL INFORMATION.
- PERIODIC SITE OBSERVATION BY THE ENGINEER IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
- THE INFORMATION CONTAINED ON THE ELECTRICAL DRAWINGS IS IN ITSELF INCOMPLETE AND VOID UNLESS USED IN CONJUNCTION WITH ALL OTHER DISCIPLINE DRAWINGS, THE SPECIFICATIONS, TRADE PRACTICES, OR APPLICABLE STANDARDS, CODES, ETC., AND SHALL BE CONSIDERED THE CONTRACT DOCUMENTS AND WITH ALL THEREIN BY REFERENCE, WHICH THE CONTRACTOR CERTIFIES KNOWLEDGE OF BY SIGNING THE CONTRACT.
- CONTRACTOR IS TO ASSUME FULL RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED ON THE JOB SITE AND BETWEEN INDIVIDUAL DRAWINGS OR SETS OF DRAWINGS FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES (INCLUDING EXCAVATION, SHORING, SCAFFOLDING, BRACING, ERECTION, FORM WORK, ETC.). FOR COORDINATION OF THE VARIOUS TRADES, AND FOR SAFE CONDITIONS ON THE JOB SITE, VARIATIONS IN FIELD CONDITIONS RELATIVE TO THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS THEY ARE FOUND. WORK SHALL NOT PROGRESS UNTIL WRITTEN PERMISSION FROM THE ENGINEER IS OBTAINED.

DRAWN BY	BKK
APPROVED BY	MMG
ISSUED FOR	BID
ISSUE DATE	08/12/2024
PROJECT NUMBER	2112202420
FIELD BOOK	

ELECTRICAL  
GENERAL  
INFORMATION

E000

BUTLER COUNTY PUBLIC  
HEALTH ADDITION

610 Oak Street, Allison, IA 50602

2

4

5

6

1

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

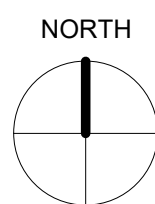
6

1

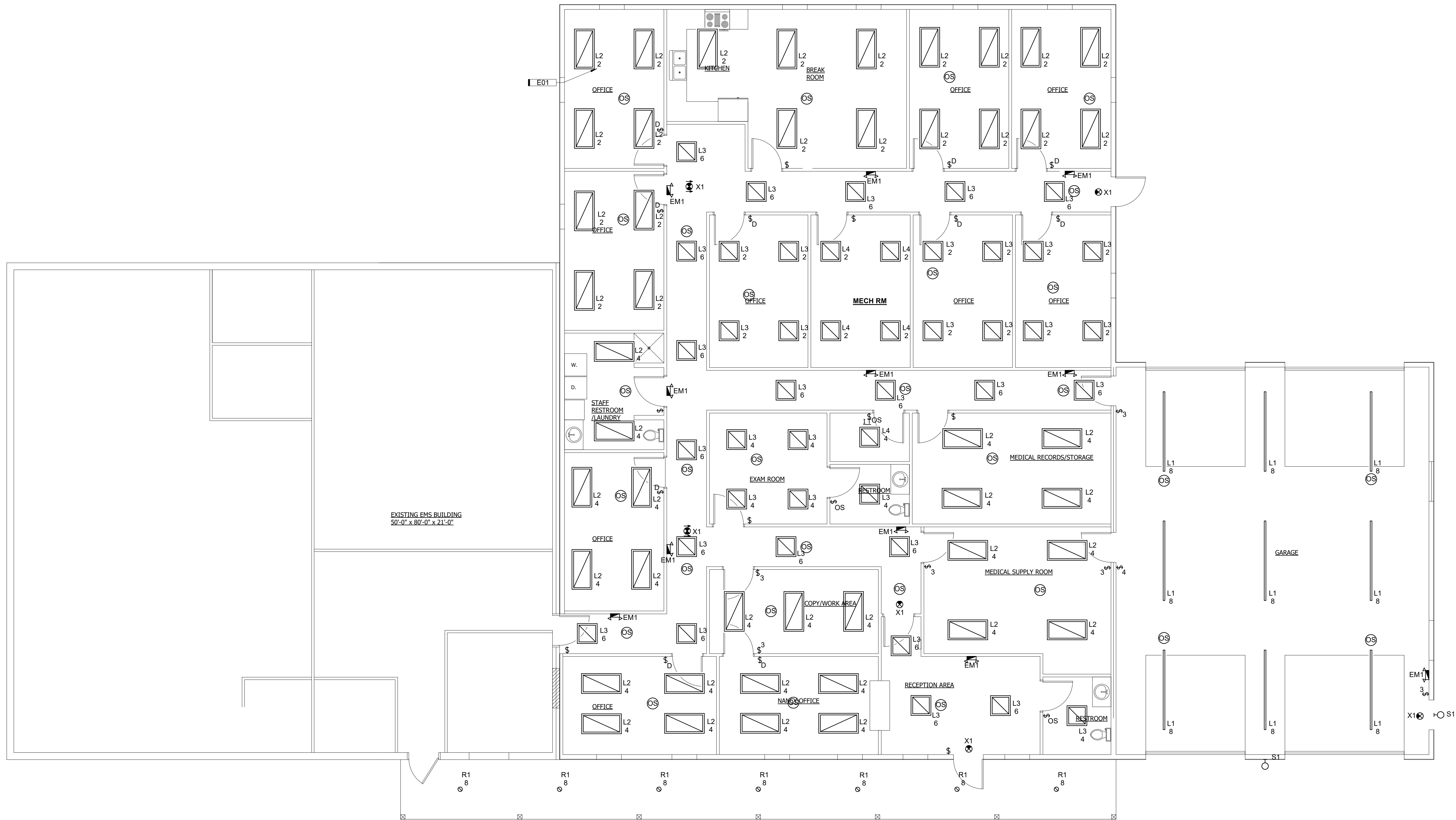
2



Autodesk Docs\2112202403 Butler Co Public Health\2112202403 MEP\2024.dwg  
21122024 3:35:31 PM  
Autodesk Revit 2021



**A6** FIRST FLOOR LIGHTING PLAN  
3/16" = 1'-0"



KEYNOTES

KEY	NOTE
E01	CIRCUITS ADDED TO NEW ADDITION SHALL BE ROUTED TO PANEL LV3, WITH CIRCUIT NUMBER INDICATED BELOW ID.

BUTLER COUNTY PUBLIC  
HEALTH ADDITION

610 Oak Street, Allison, IA 50602

FIRST FLOOR  
LIGHTING PLAN

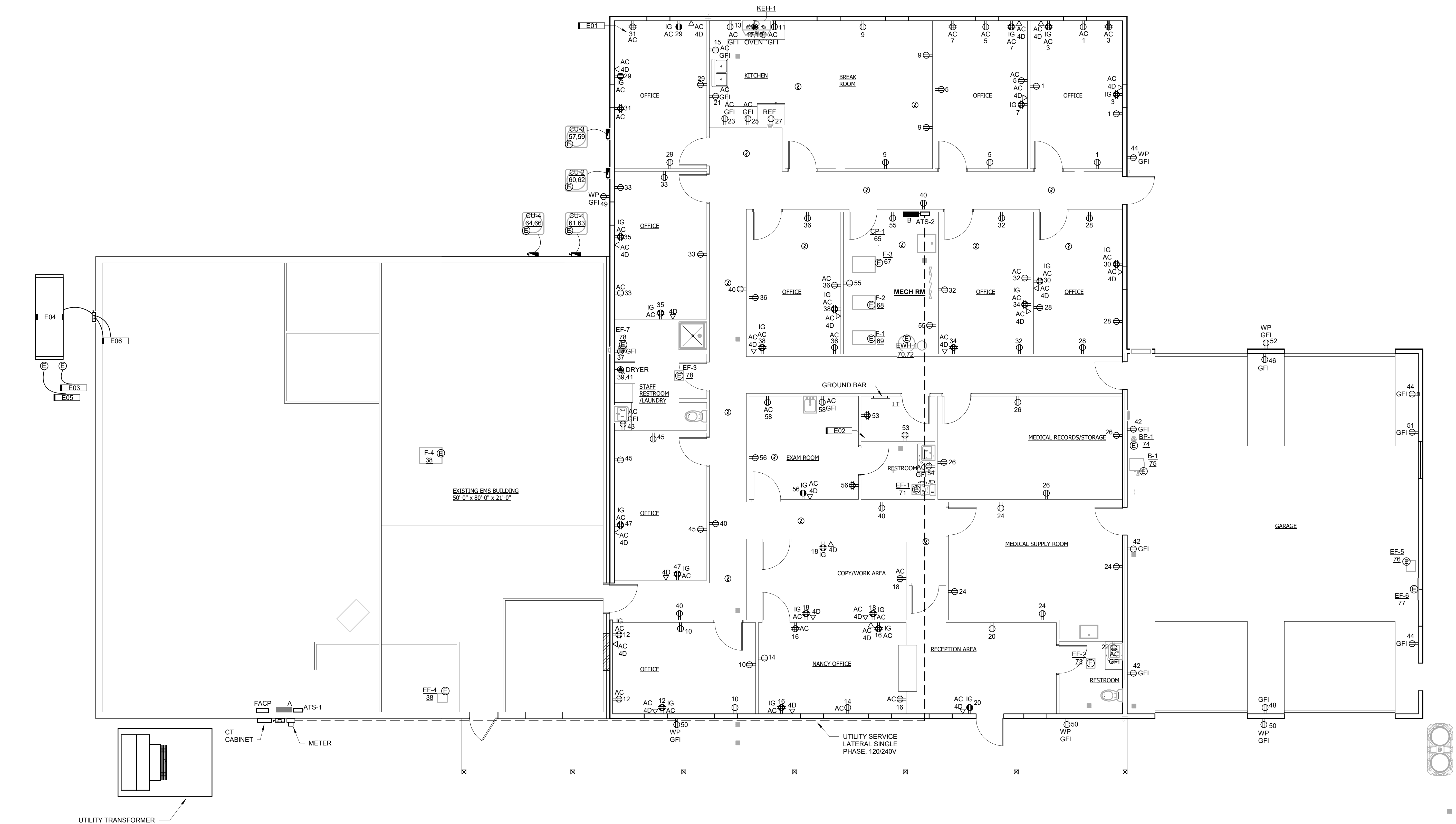
DRAWN BY	BKK
APPROVED BY	MMG
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	

E101

SHIVE-HATTERY  
ARCHITECTURE+ENGINEERING

222 THIRD AVENUE SE, SUITE 300  
CEDAR RAPIDS, IA 52401  
319.364.0227 | SHIVE-HATTERY.COM





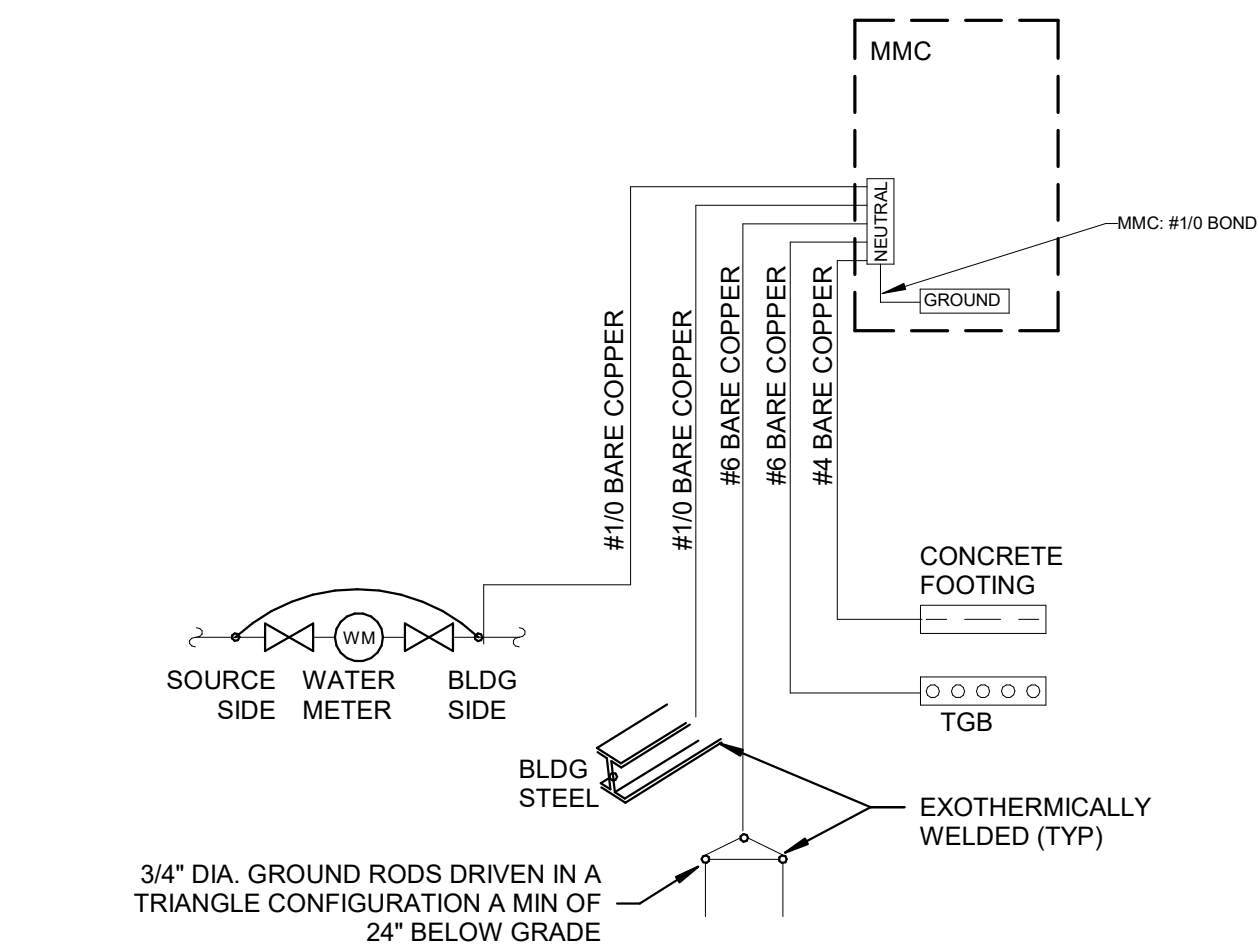
**A6 FIRST FLOOR POWER & SYSTEMS PLAN**  
3/16" = 1'-0" 0' 8"

KEYNOTES	
KEY	NOTE
E01	CIRCUITS ADDED TO NEW ADDITION SHALL BE ROUTED TO PANEL LV3, WITH CIRCUIT NUMBER INDICATED BELOW ID.
E02	ROUTE INCOMING CONDUIT IS TO BE ROUTED TO SOUTHWEST CORNER OF IT ROOM.
E03	GENERATOR BATTERY CHARGER (2)#12, (1)#12GND, 3/4" CONDUIT
E04	60KW DIESEL GENERATOR, OUTDOOR RATED, WEATHERPROOF AND SOUND ATTENUATED ENCLOSURE.
E05	PROVIDE 2" CONDUIT AND CONTROLS FOR WIRING FROM GENERATOR TO ATS (2)
E06	NEW GENERATOR, REFER TO E500 FOR ADDITIONAL DETAILS.

DRAWN BY	BKK
APPROVED BY	MMG
ISSUED FOR	BID
ISSUE DATE	08/15/2022
PROJECT NUMBER	2112202420
FIELD BOOK	



LIGHT FIXTURE SCHEDULE										
CATALOG NUMBER SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. THE DESCRIPTION AND THE SPECIFICATIONS SHALL BE COORDINATED WITH THE CATALOG NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE FIRST MANUFACTURER LISTED IS THE BASIS FOR DESIGN. ALL LIGHT SOURCES FOR THIS PROJECT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. ALL LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL DISCONNECT(S) FACTORY INSTALLED IN ACCORDANCE WITH NEC. REFER TO SPECIFICATIONS FOR SHOP DRAWING SUBMITTAL REQUIREMENTS AND ADDITIONAL INFORMATION.										
<b>GENERAL NOTES:</b> A. WHERE "OR ENGINEER APPROVED EQUAL" IS LISTED IN THE APPROVED EQUIVALENT COLUMN, FIXTURES MUST BE SUBMITTED AS A SUBSTITUTION FOR APPROVAL PRIOR TO BID SUBMISSION. B. LISTED LUMENS ARE DELIVERED LUMENS. PROVIDE FIXTURE WITHIN +/- 5% OF LISTED LUMENS. C. CONTRACTOR SHALL COORDINATE CEILING TYPES WITH GENERAL CONTRACTOR PRIOR TO ORDERING OF LIGHT FIXTURES. PROVIDE MOUNTING COMPONENTS AS REQUIRED BASED ON APPLICABLE CEILING TYPE. D. LUMINAIRE FINISH TO BE SELECTED DURING SHOP DRAWING REVIEW.										
<b>SCHEDULE NOTES:</b> 1. FURNISH PROJECT SPECIFIC SHOP DRAWINGS.										
TYPE	DESCRIPTION	LENS/LOUVER	MTG	LIGHTING OUTPUT/CCT	DRIVER	VOLTAGE	WATTAGE	BASIS OF DESIGN	APPROVED EQUIVALENT	NOTES
EM1	THERMOPLASTIC EMERGENCY LIGHT, TWO 1.2W LED HEADS, SELF-DIAGNOSTICS, WHITE HOUSING	POLYCARBONATE LENS	CL/WL	LED, 220 LUMENS, 5000K	STND	120 V	2.4 W	LITHONIA ELM2L	ASTRALITE TP-100-LED, DUAL-LITE EV, ISOLITE RL2LED, MULE LIGHTING MS-HO	
L1	2" W X 4.5" H X 4" LONG LED LINEAR DIRECT, STEEL HOUSING	SOFT DIFFUSE ACRYLIC LENS	CL	LED, 8000 LUMENS, 4000K	LED DRIVER	120 V	63 W	CSS L96 AL04 MVOLT	RAB STRIPLED DOUBLE	
L2	2' X 4' LED PANEL, STEEL HOUSING, SWITCHABLE CCT	FROSTED ACRYLIC LENS	RE-A	LED, 4400 LUMENS, 4000K	LED 0-10V DRIVER	120 V	39 W	TCP DTF4UZD3950K	ALS LPA, COLUMBIA LIGHTING CBT1-LSCS, CREE C-LITE C-TR, RAB EZPANFA	
L3	2' X 2' LED PANEL, STEEL HOUSING, SWITCHABLE CCT	FROSTED ACRYLIC LENS	RE-A	LED, 3200 LUMENS, 4000K	LED 0-10V DRIVER	120 V	29 W	TCP DTF2UZD2950K	ALS LPA, COLUMBIA LIGHTING CBT1-LSCS, CREE C-LITE C-TR, RAB EZPANFA	
L4	2' X 2' LED PANEL, STEEL HOUSING, SWITCHABLE CCT	FROSTED ACRYLIC LENS	SUSPENDED PLUG-IN	LED, 3200 LUMENS, 4000K	LED 0-10V DRIVER	120 V	29 W	TCP DTF2UZD2950K	ALS LPA, COLUMBIA LIGHTING CBT1-LSCS, CREE C-LITE C-TR, RAB EZPANFA	
R1	6" DIAMETER LED ROUND OPEN DOWNLIGHT, ROUND WHITE REFLECTOR, WIDE DISTRIBUTION	---	RE-AG	LED, 1100 LUMENS, 4000K	LED DRIVER	120 V	13 W	NORA NOXTW56311WW	RAB WFRD	
S1	EXTERIOR WALL LED FIXTURE, 12" W X 7" D X 9" H, ALUMINUM HOUSING, VISUAL COMFORT FORWARD THROW DISTRIBUTION	FROSTED ACRYLIC LENS	WL	LED, 3000 LUMENS, 4000K	LED DRIVER	120 V	23 W	LITHONIA WDGE	RAB SLIM17FA	
X1	LED SINGLE FACE EDGE-LIT EXIT SIGN ON CLEAR BACKING, EXTRUDED BRUSHED ALUMINUM FINISH, RED LETTERS, ARROWS AS INDICATED	---	CL	LED	LED DRIVER	120 V	3 W	LITHONIA EDGR	ASTRALITE ELX-UNVRC, COMPASS CEL, EMERGLITE PRESTIGE ECONOMIZER, LIGHTALARMS SIMPLICITY, LSI ELX, MULE LIGHTING CEL	



**G2 GROUND SYSTEM DETAIL**  
NOT TO SCALE

ELECTRICAL AND MECHANICAL COORDINATION SCHEDULE															
<b>NOTES:</b> 1. FAN TO BE SUPPLIED FROM MANUFACTURER WITH LOCAL CONVENIENCE SWITCH WITHIN EXHAUST FAN SHROUD.															
<b>KEY:</b> FWE = FURNISHED WITH EQUIPMENT FVNR = FULL VOLTAGE NON-REVERSING MANUF = MANUFACTURER FLA = FULL LOAD AMPS MCA = MINIMUM CIRCUIT AMPACITY EXST = EXISTING NF = NONFUSED F = FUSED HP = HORSEPOWER WP = WEATHERPROOF ED = ELECTRICAL CONTRACTOR BAS = BUILDING AUTOMATION SYSTEM MTR SW = MOTOR SWITCH															
PLAN MARK	VOLTAGE	PHASE	FLA	MCA	MOCP / DISCONNECT	FUSE	HP	WATTAGE	KVA	CONDUIT AND WIRE SIZE	CONTROL OR STARTER	CONTROLLER OR STARTER FURNISHED / INSTALLED	DISCONNECT TYPE	DISCONNECT FURNISHED / INSTALLED	REMARKS
B-1	120	1	1.80	2.25	20.00	-		216	0.22	2#12, 1#12G, 3/4"	TS	DIV 23 / DIV 23	F, NEMA1	DIV 26 / DIV 26	
BP-1	120	1	4.40	5.50	20.00	-	1/20	528	0.53	2#12, 1#12G, 3/4"	TS	DIV 23 / DIV 23	MS, NEMA1	DIV 26 / DIV 26	
CP-1	120	1	4.40	5.50	20.00	-	1/6	528	0.53	2#12, 1#12G, 3/4"	MS	DIV 26 / DIV 26	MS, NEMA1	DIV 26 / DIV 26	
CU-1	240	1	18.40	23.00	40.00	-		4416	4.42	2#10, 1#10G, 3/4"	THERMOSTAT	DIV 23 / DIV 23	F, NEMA3R	DIV 26 / DIV 26	
CU-2	240	1	16.80	21.00	40.00	-		4032	4.03	2#10, 1#10G, 3/4"	THERMOSTAT	DIV 23 / DIV 23	F, NEMA3R	DIV 26 / DIV 26	
CU-3	240	1	23.20	29.00	40.00	-		5568	5.57	2#8, 1#10G, 3/4"	THERMOSTAT	DIV 23 / DIV 23	F, NEMA3R	DIV 26 / DIV 26	
CU-4	240	1	18.40	23.00	40.00	-		4416	4.42	2#10, 1#10G, 3/4"	THERMOSTAT	DIV 23 / DIV 23	F, NEMA3R	DIV 26 / DIV 26	
EF-1	120	1	0.13	0.16	20.00	-	-	15	0.02	2#12, 1#12G, 3/4"	OS	DIV 26 / DIV 26	MS, NEMA1	DIV 26 / DIV 26	
EF-2	120	1	0.13	0.16	20.00	-	-	15	0.02	2#12, 1#12G, 3/4"	OS	DIV 26 / DIV 26	MS, NEMA1	DIV 26 / DIV 26	
EF-3	120	1	0.44	0.55	20.00	-	-	53	0.05	2#12, 1#12G, 3/4"	OS	DIV 26 / DIV 26	MS, NEMA1	DIV 26 / DIV 26	
EF-4	120	1	0.10	0.13	20.00	-	-	12	0.01	2#12, 1#12G, 3/4"	OS	DIV 26 / DIV 26	MS, NEMA1	DIV 26 / DIV 26	
EF-5	120	1	0.23	0.29	20.00	-	-	28	0.03	2#12, 1#12G, 3/4"	OS	DIV 26 / DIV 26	MS, NEMA1	DIV 26 / DIV 26	
EF-6	120	1	0.00	0.00	20.00	-	1/3	0	0.00	2#12, 1#12G, 3/4"	CO	DIV 23 / DIV 23	MS, NEMA1	DIV 26 / DIV 26	
EF-7	120	1	0.67	0.83	20.00	-	-	80	0.08	2#12, 1#12G, 3/4"	PS	MFR / MFR	MS, NEMA1	DIV 26 / DIV 26	
EW-1	240	1	50.00	62.50	70.00	-	-	12000	12.00	2#4, 1#6G, 1"	TS	MFR / MFR	CKT BKR	DIV 26 / DIV 26	
F-1	120	1	4.40	5.50	15.00	-	1/2	528	0.53	2#12, 1#12G, 3/4"	THERMOSTAT	DIV 23 / DIV 23	MS, NEMA1	DIV 26 / DIV 26	
F-2	120	1	4.40	5.50	15.00	-	1/2	528	0.53	2#12, 1#12G, 3/4"	THERMOSTAT	DIV 23 / DIV 23	MS, NEMA1	DIV 26 / DIV 26	
F-3	120	1	4.40	5.50	15.00	-	3/4	528	0.53	2#12, 1#12G, 3/4"	THERMOSTAT	DIV 23 / DIV 23	MS, NEMA1	DIV 26 / DIV 26	
F-4	120	1	4.40	5.50	15.00	-	3/4	528	0.53	2#12, 1#12G, 3/4"	THERMOSTAT	DIV 23 / DIV 23	MS, NEMA1	DIV 26 / DIV 26	

BRANCH PANEL NAME		VOLTAGE		PHASE		WIRE		BUS SIZE		MAIN OCP		A/C RATING	
A		240/120 Single		1		3		200 AMPS		200 A		10,000 AMPS SYMMETRICAL	
		CODE: L=LIGHTING, R=RECEPTACLES, M=MOTORS, K=KITCHEN										MOUNTING: SURFACE	
ROOM:												ENCLOSURE: NEMA1	
FED FROM:		EXISTING PANEL										FEED:	
LOAD	NOTE	POLE	BKR	CKT #	A	B	CKT #	BKR	POLE	NOTE	LOAD		
AIR COMP	--	2	60 A	3	0.0/0.0		30 A	1	--	--	RCPT GI OUTLET		
SPARE (OFF)	--	2	100 A	5	0.0/0.0		6	100 A	2	--	RCPT GI OUTLET		
ROOF AHU	--	2	60 A	9	0.0/0.0		8	20 A	1	--	MACHINE (OFF)		
EXISTING LOAD	--	2	60 A	13	0.0/0.0		12	20 A	1	--	W DOOR OPENER		
MICROWAVE/COFFEE	--	1	20 A	15	0.0/0.0		14	20 A	2	--	RCPT STOR. E WALL		
WATER HEATER	--	1	20 A	17	0.0/0.0		16	20 A	2	--	LITES STORAGE		
WAREHOUSE HEATER	--	1	20 A	19	0.0/0.0		18	15 A	1	--	RCPT RIGHT OF PANEL-A		
LITES MECH RM	--	1	20 A	21	0.0/0.0		20	20 A	1	--	RCPT ISSO GRND RACK		
RCPT REF	--	1	20 A	23	0.0/0.0		22	20 A	1	--	RCPT ROOF SERVICE		
LITES OFFICE, RESTRM	--	1	20 A	25	0.0/0.0		24	20 A	1	--	S DOOR OPENER		
RCPT OFFICE	--	1	20 A	27	0.0/0.0		26	20 A	1	--	RCPT STORAGE SE		
SPARE (OFF)	--	2	20 A	29	0.0/0.0		28	20 A	1	--	RCPT E SHOP		
LITES SHOP	--	2	20 A	31	0.0/0.0		30	20 A	1	--	RCPT E SHOP		
LEFT OF PANELS/FIRE	--	1	20 A	33	0.0/0.0		32	20 A	1	--	RCPT E SHOP		
				35	0.0/0.0		34	20 A	1	--	RCPT W SHOP		
				37	0.0/0.5		36	20 A	1	--	RCPT W SHOP		
				39	0.0/0.0		38	20 A	1	--	EX F RSTRM, FURNACE		
							40	20 A	1	--	RCPT E SHOP		
TOTAL LOAD:				540.0 VA		0.0 VA							
TOTAL AMPS:				4.5 A		0.0 A							
LOAD CLASSIFICATION		CONNECTED LOAD (VA)		DEMAND FACTOR		ESTIMATED DEMAND (VA)		PANEL TOTALS					
								TOTAL CONN. LOAD: 540.0 VA					
								TOTAL EST. DEMAND: 540.0 VA					
								TOTAL CONN. CURRENT: 2.3 A					
								TOTAL EST. DEMAND CURRENT: 2.3 A					
NOTES:													

BRANCH PANEL NAME		VOLTAGE		PHASE		WIRE		BUS SIZE		MAIN OCP		A/C RATING		
<b>B</b>		240/120 Single		1		3		200 A		200 A		10,000 AMPS		
		CODE: L=LIGHTING, R=RECEPTACLES, M=MOTORS, K=KITCHEN										MOUNTING: SURFACE		
ROOM:												ENCLOSURE: NEMA1		
FED...		SQUARE D PANEL - NEW ADDITION										FEED:		
LOAD		CODE	POLE	BKR	CKT #	A		B		CKT #	BKR	POLE	CODE	LOAD
RCPT NE OFFICE		1	20 A	1	0.7/1.3			2		20 A	1	--	--	LITES N OFFICES, BKRM
RCPT NE OFFICE QUAD		1	20 A	3		1.1/1.2		4		20 A	1	--	--	LITES S OFFICES, RCPT
RCPT NE OFFICE		1	20 A	5	0.7/0.6			6		20 A	1	--	--	LITES CORR
RCPT NE OFFICE QUAD		1	20 A	7		1.1/0.7		8		20 A	1	--	--	LITES GARAGE
RCPT BKRM		1	20 A	9	0.7/0.5			10		20 A	1	--	--	RCPT SW OFFICE
RCPT AC GFI KITCHEN		1	20 A	11		0.2/1.1		12		20 A	1	--	--	RCPT SW OFFICE QUAD
RCPT AC GFI KITCHEN		1	20 A	13	0.2/0.4			14		20 A	1	--	--	RCPT NANCY OFFICE
RCPT AC GFI KITCHEN		1	20 A	15		0.2/1.4		16		20 A	1	--	--	RCPT NANCY OFFICE QUAD
RCPT OVEN KITCHEN		2	40 A	17	0.2/1.4			18		20 A	1	--	--	RCPT COPY/WORK AREA
RCPT AC GFI KITCHEN		1	20 A	19		0.2/0.4		20		20 A	1	--	--	RCPT RECEPTION
RCPT AC GFI KITCHEN		1	20 A	21	0.2/0.2			22		20 A	1	--	--	RCPT AC GFI RESTROOM
RCPT AC GFI KITCHEN		1	20 A	23		0.2/0.7		24		20 A	1	--	--	RCPT MED SUPPLY
RCPT AC GFI KITCHEN		1	20 A	25	0.2/0.7			26		20 A	1	--	--	RCPT MED STOR
RCPT REF BKRM		1	20 A	27		0.2/0.7		28		20 A	1	--	--	RCPT E OFFICE
RCPT NW OFFICE		1	20 A	29	0.7/0.7			30		20 A	1	--	--	RCPT E OFFICE QUAD
RCPT NW OFFICE QUAD		1	20 A	31		0.7/0.7		32		20 A	1	--	--	RCPT E OFFICE
RCPT NW OFFICE		1	20 A	33	0.7/0.7			34		20 A	1	--	--	RCPT E OFFICE QUAD
RCPT NW OFFICE QUAD		1	20 A	35		0.7/0.7		36		20 A	1	--	--	RCPT C OFFICE
RCPT GFI WASHER		1	20 A	37	0.2/0.7			38		20 A	1	--	--	RCPT C OFFICE QUAD
RCPT DRYER OUTLET		2	40 A	39		0.2/0.9		40		20 A	1	--	--	RCPT CORR
RCPT AC GFI		1	20 A	41	0.2/0.5			42		20 A	1	--	--	RCPT W GFI GARAGE
RCPT AC GFI		1	20 A	43		0.2/0.5		44		20 A	1	--	--	RCPT E GFI GARAGE
RCPT W OFFICE		1	20 A	45	0.5/0.2			46		20 A	1	--	--	RCPT N GFI GARAGE
RCPT W OFFICE QUAD		1	20 A	47		0.7/0.2		48		20 A	1	--	--	RCPT S GFI GARAGE
RCPT WP GFI		1	20 A	49	0.2/0.5			50		20 A	1	--	--	RCPT S WP GFI
RCPT GARAGE E WALL		1	20 A	51		0.2/0.2		52		20 A	1	--	--	RCPT N WP GFI
RCPT IT		1	20 A	53	0.7/0.2			54		20 A	1	--	--	RCPT EXAM RR AC GFI
RCPT MECH RM		1	20 A	55		0.5/0.7		56		20 A	1	--	--	RCPT EXAM RM
CU-3		2	40 A	57	2.8/0.4			58		20 A	1	--	--	RCPT EXAM RM
				59		2.8/2.0		60		40 A	2	--	--	CU-2
CU-1		2	40 A	63	2.2/2.0			64		40 A	2	--	--	CU-4
CP-1		1	20 A	65	0.5/2.2			66		15 A	1	--	--	F-2
F-3		1	15 A	67		0.5/0.5		68		15 A	1	--	--	
F-1		1	15 A	69	0.5/6.0			70		20 A	2	--	--	EW-1
EF-1		1	20 A	71		0.0/6.0		72		20 A	1	--	--	
EF-2		1	20 A	73	0.0/0.5			74		20 A	1	--	--	BP-1
B-1		1	20 A	75		0.2/0.0		76		20 A	1	--	--	EF-5
EF-6		1	20 A	77	0.0/0.1			78		20 A	1	--	--	EF-3, EF-7
SPACE		--	--	--	79	0.0/0.0		80		--	1	--	--	SPACE
SPACE		--	--	--	81	0.0/0.0		82		--	1	--	--	SPACE
SPACE		--	--	--	83	0.0/0.0		84		--	1	--	--	SPACE
TOTAL LOAD:						32149.8 VA		32964.6 VA						
TOTAL AMPS:						267.9 A		274.7 A						
Load Classification		Connected Load (VA)		Demand Factor		Estimated Demand (VA)						PANEL TOTALS		
LIGHTING		3735.4 VA		100%		3735.4 VA						TOTAL CONN. LOAD:		65114.4 VA
RCPT		27180 VA		68.4%		18590 VA						TOTAL EST. DEMAND:		47092.4 VA
MOTORS		191 VA		100%		191 VA						TOTAL CONN. CURRENT:		271.3 A
HEATING HVAC		14856 VA		88.47%		13142.4 VA						TOTAL EST. DEMAND...		196.2 A
COOLING HVAC		18432 VA		58.13%		10713.6 VA								
Other		720 VA		100%		720 VA								
Notes:														